**UNITED STATES DISTRICT COURT
DISTRICT OF MASSACHUSETTS**

DIGITAL SIN, INC.,
 	
         Plaintiff,
   v.
 	
 DOES 1 – 41,
 	
         Defendants.
	CIVIL ACTION No.: 1:12-cv-10946
	
	 DECLARATION OF JON NICOLINI

I, Jon Nicolini, declare as follows:

    1.   I am the Chief Technology Officer of Copyright Enforcement Group, LLC ("CEG").

    2.   CEG's address is 8484 Wilshire Boulevard, Suite 220, Beverly Hills, California 90211.

    3.   CEG is in the business of discovering infringements, and arranging for the enforcement, of the copyrights of its clients. Plaintiff in this case is a client of CEG. Based on information provided to me, I state that Plaintiff DIGITAL SIN, INC. is a motion picture creator and distributor, and the motion picture named in the DIGITAL SIN, INC. Complaint (hereinafter the "Work") is among the motion pictures whose copyrights are the subject of the CEG's efforts.

    4.   Music and motion picture piracy (i.e., the unauthorized copying and/or distribution of songs and motion pictures) has been a problem since the advent of home audio and video devices. The problem continued with the introduction of home CD and DVD players. An article describing the problem when CDs and DVDs were a popular way to distribute audio and visual works can be found here:

        http://www.thefreelibrary.com/DVD+piracy+in+the+U.S.+becomes+an+industry-a0103403775 (attached

        to this Declaration as **Exhibit B**)

Today, piracy has increased dramatically with the ability to store digital files of songs and motion pictures in the memory of home and/or laptop computers, as well as other devices such as iPads and iPhones. (In this Declaration, the term "computer" is, unless otherwise stated, meant to refer to any device or system that may store data and communicate on the Internet. Common

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1   examples of computers include, but are not limited to: desktop computers, laptop computers,

2   tablet computers, smartphones, electronic readers, media players and even home entertainment

3   systems.) Technology developments over the last several years allow people to distribute such

4   files to each other over the Internet on peer-to-peer networks (sometimes called "P2P" networks)

5   using file sharing software applications such as BitTorrent.   Articles describing aspects of

6   motion picture piracy, as well as piracy of games and books, over P2P networks could be found,

7   at least until recently, at these web pages, among others:

8   http://www.forbes.com/2009/08/04/online-video-piracy-technology-e-gang-09-movies.html (attached to

9   this Declaration as **Exhibit C**)

10   http://www.mpaa.org/resources/8aaaecf5-961e-4eda-8c21-9f4f53e08f19.pdf (attached to this

11   Declaration as **Exhibit D**)

12   http://www.forbes.com/2008/09/12/spore-drm-piracy-tech-security-cx_ag_mji_0912spore.html (attached

13   to this Declaration as **Exhibit E**)

14   http://reviews.cnet.com/8301-18438_7-20033437-82.html (attached to this Declaration as

15   **Exhibit F**).

16   5.   Before explaining how a P2P network, in particular a BitTorrent P2P network,

17   works, I will describe a hypothetical "old school" example of cooperative copyright infringements.

18   While this example is not 100% analogous to P2P infringements, it illustrates in an easy to

19   understand manner how separate people, while committing a series of separate copyright

20   infringements, can cooperate together to expedite the process of making unauthorized copies. A

21   law student (let's call him or her the "first student") in a law school class of 100 students makes a

22   copy of a casebook, for example <u>Prosser, Wade, Schwartz, Kelly and Partlett's Cases and</u>

23   <u>Materials on Torts, - 12th Edition</u> ("Torts Casebook"). The first student figures that he or she

24   will be lauded for making a copy of that very expensive book and making it available for further

25   copying by classmates. That first student made a significant investment of money purchasing the

26   Torts Casebook, and spent considerable time in the page by page photocopying from the bound

27   casebook to come up with 1,276 pages of a single-sided copy of the Torts Casebook:

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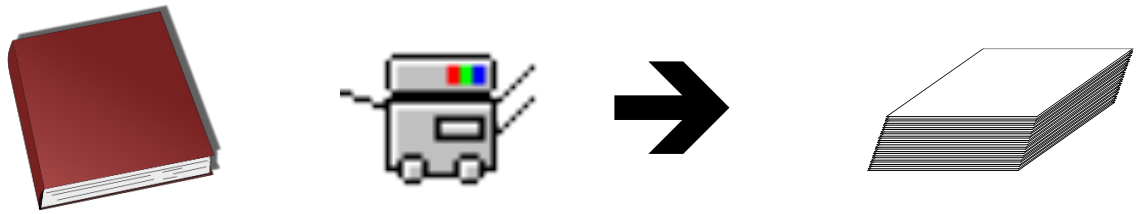
However, what the first student ultimately wants, besides being a "hero" among certain of his/her classmates with respect to the Torts Casebook, is for other people in the class to do the same with respect to the Criminal Law Casebook, the Civil Procedure Casebook, and all the other books. The first student would be getting all books for the year for just the price of one book, while most students partaking in the scheme would be getting all books for free. In any event, the first student sends out a notice that there will be a book copying event in a certain room, in which stands a free photocopier, for anyone who wants to make a copy of the Torts Casebook. The first student would require, however, that anyone (referred to as a "subsequent student") who wants to leave the room with a copy must leave a copy behind for anyone else who comes to the room seeking to make another copy. If the copier is a 60 pages per minute copier, each student making a copy of the book from the first student's unauthorized copy would still have to invest just over 21 minutes of time to make a copy, but at over $150 for a new authorized copy of the book or $65 for a used authorized copy (according to Amazon.com on March 6, 2012), the money saved by the subsequent student's engaging in making an unauthorized copy could easily justify the time spent. The first student has saved the subsequent student a significant amount of time by making a unbound, single-sided copy available as opposed to the authorized bound copy. The time required for each infringement could be significantly decreased if there are multiple photocopiers available and the pages of the first student's unauthorized copy are divided among them. For example, if four photocopiers are available, the first student's notice could read and look like this,

> A copy of the Torts Casebook,
>
> Prosser, Wade, Schwartz, Kelly and Partlett's Cases and Materials on Torts, - 12th Ed.
> is available for you to copy in room 123.

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> The first 319 pages are in photocopier 1
> Pages 320-638 are in photocopier 2.
> Pages 639-957 are in photocopier 3.
> Pages 958-1276 in photocopier 4.
>
> Run a copy of each block of pages, take the new copy
> for yourself, and leave the 'original' in each photocopier.

The first student might post the notice in the torts classroom, and in any or every room in which the first student would expect classmates to see such a notice. A subsequent student just starts the photocopiers and less than 6 minutes later scoops up from the photocopiers' output trays a complete copy (1276 pages) of the Torts Casebook. The next student comes in and puts the four sections of the first student's unauthorized copy of the Torts Casebook back into the respective input trays of the four photocopiers, and repeats the process. As long as the students cooperate by each making a new unauthorized copy and not merely grabbing the copy that is there, all 99 of the first student's classmates could have a copy of the Torts Casebook in just under 10 hours, with each student's time investment being less than 6 minutes.
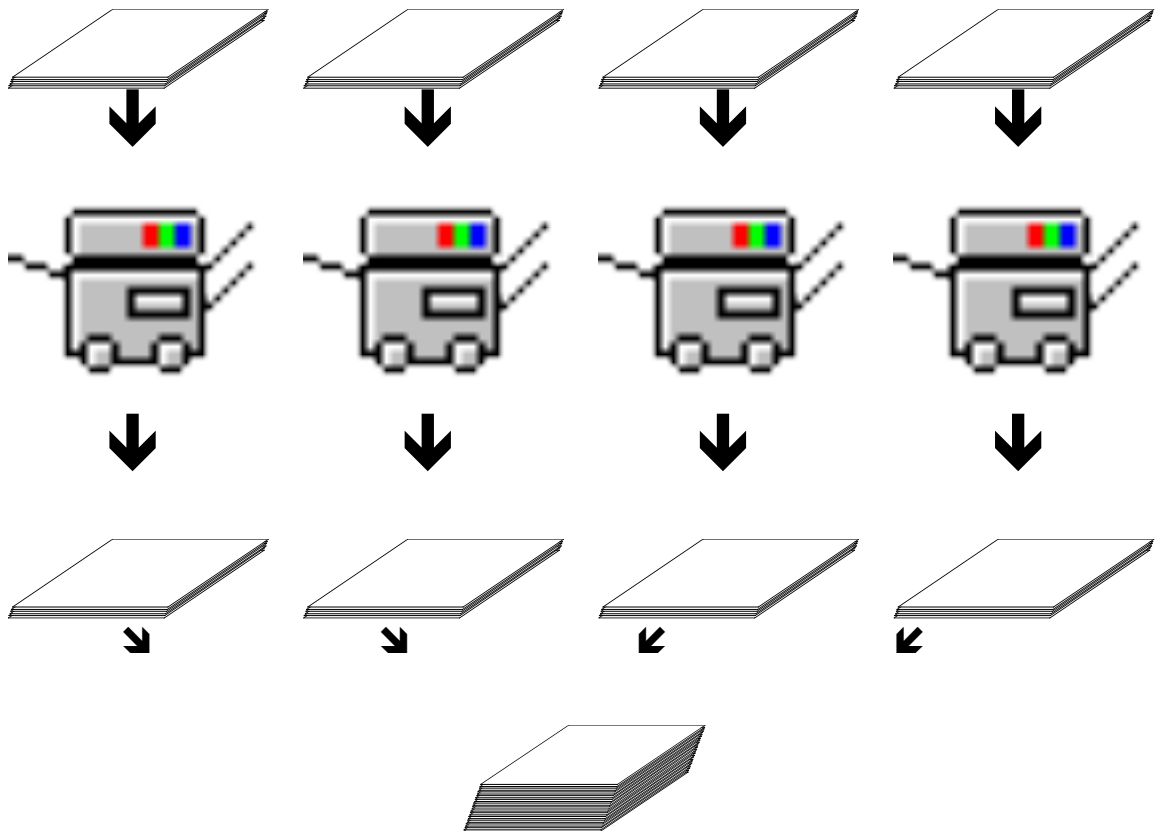
1   The photocopy machines are of course mere tools, being useful for a student to innocently make

2   copies of a moot court brief as well for the student to non-innocently make unauthorized copies

3   of the works created by others. Of course, that "old school" type of copying was and is relatively

4   rare because there was, and is, a significant and obvious risk of being easily caught.

5   6.   With that "old school" example having been described above, I will now describe

6   how BitTorrent peer-to-peer copying works. As noted above, BitTorrent peer-to-peer copying is

7   somewhat similar to the "old school" example, and relies even more on cooperation. It should be

8   kept in mind that just as photocopying a book may not be unlawful–for example, the book may

9   be out of copyright. Merely using BitTorrent to copy a file is not unlawful if the file being

10 copied is a digital file of a public domain work.

11   7.   Neither of the two major operating systems for personal computers (i.e., those

12 developed by Microsoft Corporation and Apple, Inc.) nor any of the four most used web

13 browsers, namely, Microsoft Internet Explorer, Mozilla Firefox, Google Chrome and Apple

14 Safari, which are used by well over 90% of users in the United States, include native

15 functionality for peer-to-peer file sharing over the Internet. Regarding the relative popularity of

16 browsers, see the following articles that could be found, at least until recently, at these web

17 pages, among others, on the Internet:

18   http://gs.statcounter.com/#browser-US-monthly-201103-201202-bar (attached to this

19   Declaration as **Exhibit G**)

20   http://www.statowl.com/web_browser_market_share.php?1=1&timeframe=last_3&interval=mont

21   h&chart_id=4&fltr_br=&fltr_os=&fltr_se=&fltr_cn=&timeframe=last_12 (attached to this

22   Declaration as **Exhibit H**).

23 Other than Microsoft Internet Explorer and Apple Safari, all other browsers must be intentionally

24 installed. Therefore, the original "seeder" and each of the other members of the "swarm" (i.e.,

25 each of the "peers") must have separately installed on their respective computers special software

26 that allows peer-to-peer sharing of files by way of the Internet. (The terms of art, "seeder,"

27 "peer," "leechers," and "swarm," will be described below.) The most popular type of peer-to-

28 peer file sharing utilizes the BitTorrent protocol, in connection with which the seeder and

members of the swarm use software (or applications) known as "BitTorrent clients." (In this context, the word "client" means a computer application that works in a BitTorrent environment.) Among the most popular BitTorrent clients are Vuze (formerly Azureus), µTorrent, Transmission and BitTorrent 7, although many others are used as well. In peer-to-peer network sharing, a "swarm" is a group of seeds and peers sharing a digital file through the same torrent file. A "peer" is one of the computers in a swarm sharing the digital file. A "seed" is a complete copy of the digital file of a work being made available for download. A "seeder" is either the computer on which the digital file was originally made available to a swarm, or a peer that has completed downloading the digital file and is making it available to others. Often, the people operating the computers are referred to as seeders, or seeds or peers as appropriate. In addition, "peers" are sometimes referred to as "leechers" (i.e. a peer that downloads more than it uploads), though the BitTorrent system is designed for every peer to become a partial seeder once that peer has received even one piece of the desired digital file. In any event, the seeder and every other member of the swarm (i.e., peer) must intentionally install a BitTorrent client (i.e., software application) onto his/her computer before that computer can be used to join a BitTorrent P2P file sharing network.

8.   P2P networks distribute infringing copies of motion pictures (and works in other forms such as music, games and books) with file sharing software such as BitTorrent as follows: The process begins with a person who decides that a particular work should be available for free to his/her fellow Internet users. After obtaining a digital file of the work or taking the work and making a digital file copy of it, that person uses a BitTorrent client to create what is called a "torrent file." A torrent file is uniquely associated with the digital file of the work (sometimes referred to as the "content file"). That person, who I will refer to as "the initial seeder," then accesses the Internet through an Internet Service Provider ("ISP") and intentionally makes the content file of the work available on the Internet to the public from his/her computer. That content file on the initial seeder's computer is often referred to as the first or initial "seed."

9.   As indicated above, there is a one-to-one relationship between the content file and the torrent file. The torrent file, among other things, points to the content file. While the content

1   file is very large, the torrent file is very small. The torrent file describes the content file that is

2   being distributed, what pieces, often referred to as "blocks" or "chunks," into which the content

3   file is divided, and other information needed for distribution of the content file. Typically, the

4   title of the torrent file would include the name of the work included in the content file. The

5   initial seeder would make his/her torrent file available on one or more websites. Alternatively,

6   instead of uploading the torrent file to one or more websites, an initial seeder could make a link,

7   often referred to in the field as a "magnet link," available on one or more websites. The magnet

8   link is a relatively new medium by which peers can access torrents. Its popularity is due to its

9   not requiring the hosting of any files on a continuously available website. The magnet link is a

10 uniform reference indicator ("URI") scheme similar to a uniform reference locator ("URL") that,

11 when clicked, allows the aforementioned torrent file to be downloaded from other peers (at first

12 the initial seeder) connected to the swarm as opposed to an individual web server. In either

13 event, for a piece (or block) of a content file to be copied by one peer from another member of

14 the swarm that is acting as a seeder (e.g., because that other member has at least one block of the

15 content file), both computers must have the same torrent file. The torrent file includes other data

16 such as the separate hashes for each of the pieces into which the content file is divided for

17 BitTorrent P2P distribution. (A "hash" is an alphanumeric string of characters mathematically

18 derived from the characteristics of a file.) With the block-hash data, the computer doing the

19 downloading, after it receives a block, does, through the BitTorrent client on its computer, a

20 mathematical analysis of the downloaded block to confirm that that block has the hash that it

21 should.   That guarantees that only correct pieces of the content file are copied from one

22 computer to another.

23   10.   By way of a broad analogy, the "content file" would be similar to the 1,276 page

24 unauthorized copy of the Torts Casebook made by the first student in the "old school example"

25 given above. The first student would be similar to the "initial seeder," the "blocks" into which

26 the content file is divided for distribution would be similar to the sets of pages into which the

27 1,276 pages were divided, the "torrent file" would be similar to the notice posted by the first

28 student, the BitTorrent P2P network "swarm" (i.e., all the computers that have joined the swarm)

1 would be analogous to the room with the photocopy machines in it, and the subsequent students

2 would be similar to "peers."

3   11.   With the title of the work being at least part of the torrent file's title, Internet users

4 looking for a work will likely find the torrent file. In fact, people looking to obtain a copy for

5 free could actually search online for the title of the work plus the word "torrent." Persons

6 seeking to download such a work also access the Internet through an ISP (which may or may not

7 be the same ISP as used by the initial seeder) and seek out the work on a P2P network. When

8 such a person finds it, he/she downloads the subject torrent file. Then, opening that torrent file

9 with his/her BitTorrent client, he/she can have his/her computer join the "swarm," that is, join the

10 group of people exchanging the work among themselves. In turn, as each peer receives portions

11 of the seed, most often that peer makes those portions available to other peers in the swarm.

12 Therefore, each peer in the swarm is at least copying and is usually also distributing pieces of the

13 work at the same time.

14   12.   Any BitTorrent client may be used to join a swarm. As more peers join a swarm

15 at any one instant, they obtain the content at even greater speeds because of the increasing

16 number of peers simultaneously offering the content as seeders (or at least partial seeders)

17 themselves for distribution of the work. In this regard, a swarm that starts with an initial seed

18 may at any later time have tens, hundreds, or thousands of partial and complete seeds. Seeds and

19 peers may enter, leave and re-enter a swarm at any time. As time goes on, the size of the swarm

20 varies, yet it may endure for a long period, with some swarms enduring for 6 months to well over

21 a year depending on the popularity of a particular work. CEG is monitoring torrent swarms

22 which remain active today even after the original upload of a torrent file in 2009. As a result, the

23 initial seed file becomes duplicated multiple times by multiple parties, with a potentially

24 exponential increase in the number of copies of any work. With respect to any particular swarm,

25 the hash (an alphanumeric representation of a file) of a torrent file remains the same.

26   13.   The premise of BitTorrent sharing is well known, and is stated on the

27 Bittorrent.com website, at least until recently here,

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1   http://www.bittorrent.com/help/guides/beginners-guide (attached to this Declaration as

2   **Exhibit I**)

3 as follows:

4   "BitTorrent is a protocol (a set of rules and description of how to do

5   things) allowing you to download files quickly by allowing people downloading

6   the file to upload (distribute) parts of it at the same time. BitTorrent is often used

7   for distribution of very large files, very popular files and files available for free, as

8   it is a lot cheaper, faster and more efficient to distribute files using BitTorrent

9   than a regular download."

10   14.   As can be seen here,

11   http://www.bittorrent.com/help/faq/concepts (attached to this Declaration as **Exhibit J**)

12 my description given above is consistent with BitTorrent, Inc.'s own description.

13   15.   An explanation of the BitTorrent system and process can be found at a webpage

14 found at:

15   http://bittorrent.org/introduction.html (attached to this Declaration as **Exhibit K**)

16 That web page is linked to from BitTorrent, Inc.'s own website. This is the explanation they

17 provide:

18   "The key to scaleable and robust distribution is cooperation. With BitTorrent,

19   those who get your file tap into their upload capacity to give the file to others at

20   the same time. Those that provide the most to others get the best treatment in

21   return. ('Give and ye shall receive!')

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23   "Cooperative distribution can grow almost without limit, because each new

24   participant brings not only demand, but also supply. Instead of a vicious cycle,

25   popularity creates a virtuous circle. And because each new participant brings new

26   resources to the distribution, you get limitless scalability for a nearly fixed cost.

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1   "BitTorrent is not just a concept, but has an easy-to-use implementation capable

2   of swarming downloads across unreliable networks."

3   The web page also provides this diagram of the initial seeder and peers with accompanying

4   wording:

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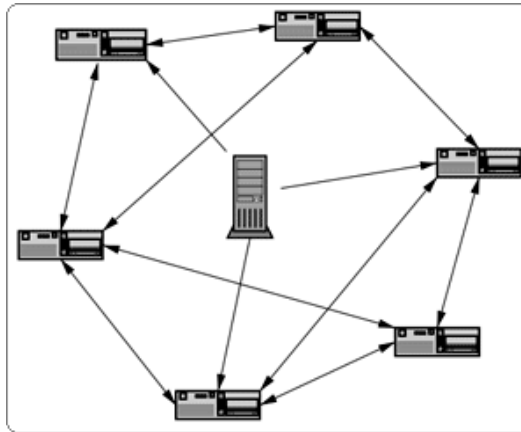
13   **The BitTorrent Solution:**
     Users cooperate in the distribution

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15   Note that in P2P networks, the copying may continue even after the initial seeder has gone

16   completely offline because of the replication perpetually occurring in the swarm.

17   16.   Each user of a computer that has a particular torrent file on his/her computer and

18   has joined a swarm related to that torrent file, has voluntarily caused his/her computer to "shake

19   hands" with other members of the swarm to either copy the content file associated with the

20   torrent file or to enable another member of the swarm to copy a portion of the content file from

21   his/her computer, or both. This is a deliberate act. Unlike stumbling onto, for example, a

22   youtube.com web page that automatically plays a video, with the Internet user merely watching

23   the video on that web page, anyone who downloads a movie over a P2P network has taken

24   several intentional steps while connected to the Internet to download (that is, make a copy of) the

25   movie. These voluntary steps include: (i) making sure that the user's computer includes a

26   BitTorrent client (an application as described above), (ii) finding a torrent file, or a magnet link

27   to a torrent file, on the Internet associated with the desired content, (iii) actually downloading

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that torrent file on to the user's computer, by clicking on the torrent file link or on the magnet

link to the torrent file, and (iv) starting the BitTorrent client, (v) using the BitTorrent, locating

and opening the torrent file on the computer, and (vii) clicking on "OK" or a similar button in the

BitTorrent client to start the downloading of the content file. Sometimes, steps (iv) and (v) are

reversed. That is, the user finds the torrent file on his/her computer, clicks on it and his/her

computer launches his/her BitTorrent client with the torrent file opened in it. When a magnet

link is used, steps (iii), (iv) and (v) appear to be combined into a single step. That is, upon the

user's clicking on a magnet link, the torrent file is downloaded to his/her computer and his/her

BitTorrent client is launched with the torrent file opened in it. In any event, the user still must,

even after clicking on the magnet link, purposely click on the "OK" button in the BitTorrent

client to begin downloading the content file. At that point, the torrent file makes the computer a

part of the swarm, with the computer copying from and often distributing the content file to

others. Continuing in this regard, even after the person has downloaded the desired movie,

his/her computer will, unless set otherwise, continue allowing others to copy from it.

17.   When an unauthorized copy of a copyrighted work is the content file in question,

each peer (i.e. member of a swarm) in a P2P network sharing that unauthorized copy has acted

and acts in cooperation with the other peers by providing an infringing reproduction of at least a

portion of a copyrighted work. This is done in anticipation of other peers doing likewise with

respect to that work and/or other works. The act of joining a P2P network is, as noted above,

intentional, requiring the selection by a peer of URLs, links, and/or files, and then the clicking of

an "OK" button to do so.

18.   Depending on the particular P2P network involved, at any one time any number

of people, from one or two to tens of thousands, unlawfully use the P2P network to upload (i.e.

distribute), or download (i.e. copy or replicate), copyrighted material. To the extent that persons

using a P2P network identify themselves, they use "user names" or "network names" which

typically are nicknames that do not disclose the true identity of the user, and do not indicate the

residence or business address of the user. So, while, as I explain below, we can detect

infringements, we can only identify the infringers by their Internet Protocol address ("IP

11

address") and the time that the infringement is detected by us. Note that while we detect an

infringement at a particular instant, the infringer may have been infringing at other times as well.

19.   The use of P2P networks, such as those accessed with BitTorrent software, to

make unauthorized copies of motion pictures has become such common knowledge that it is

casually mentioned in newspaper articles. For example, in the article titled "The Glut of Shows

Unwatched" published on the New York Times website, and which at least until recently could

be seen at this web page:

> http://www.nytimes.com/2010/09/06/business/media/06carr.html (attached to this
>
> Declaration as **Exhibit L**),

there is this statement by the article's author who was describing his efforts to find a television

show he had missed:

> "Starting to feel desperate, I thought for a moment about hopping on the laptop
>
> and searching BitTorrent for an illegal copy, but given that I make a living
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> creating original content for a large media company, stealing from another one
>
> did not seem like a good idea."

20.   Plaintiff and other similarly situated companies contract with CEG to have CEG

determine whether or not copies of their works are being distributed on the Internet without their

permission, and to identify infringers. Plaintiff does not authorize distribution of its motion

pictures on P2P networks. Further in this regard, CEG is in no way involved in creating the

torrent file used in any swarm, nor in making any content file available for downloading by

members of a swarm except to the extent that CEG has obtained any blocks of a content file from

other peers or seeds during a monitoring session.

21.   CEG utilizes a system of software components ("the System") conceptualized,

developed, and maintained by me in order to collect data about unauthorized distribution of

copies of copyrighted works on P2P networks.

22.   The System was designed for certain functions including, but not limited to:

downloading substantial portions of content files from seeds and peers in a swarm, verifying data

accuracy and accountability processes, confirming infringements, logging evidence, and the

absolute prevention of false-positives. In fact, the System has multiple levels of error detection, and its architecture is conducive to preventing false-positives. Every unique suspect content file is visually verified by two people upon its inaugural acquisition.

23.   The process as it relates to monitoring copyrighted works of CEG's clients begins as follows. When a copyrighted work is requested to be monitored, we use a web-based search to find torrent files on the Internet that have the same title as the copyrighted work. As indicated above, a torrent file is a small file. Its file extension is ".torrent." A BitTorrent P2P network infringer will at some point have both the torrent file and at least a portion of the illegal copy file of the work (sometimes referred to herein as the "accused file") on the infringer's computer. In every case that a CEG client's motion picture is available on a P2P network, it is an unauthorized distribution of the motion picture.

24.   Like any other person who wants to be a peer, we locate a torrent file relevant to a particular motion picture of one of our clients, download that torrent file to the System, and join the swarm associated with that torrent file on the Internet.

25.   When a digital copy file with the same name as CEG's client's motion picture is found on a P2P network, CEG downloads a full copy of the suspect content file. The file is then forwarded to a two stage verification process. First, one person plays the downloaded file to visually confirm that the downloaded file is at least a portion of the client's motion picture. If that confirmation is made, then a second person independently plays the downloaded file for the same purpose. If both people confirm that a substantial portion of the motion picture in the suspect file is substantially the same as a corresponding portion of CEG's client's motion picture, then particular unique data (in particular, a "hash") relating to the torrent file associated with the suspect content file (now referred to in this Declaration as the "accused file") is noted by the System, and the System searches for additional computers on the P2P network that have, and are actively distributing, the accused file through that torrent file (hereinafter the "infringement enabling torrent file"). Note that any particular work may be the subject of copying by two or more different initial seeders. In such a case, the two torrent files would have different hashes from each other, and each would be the basis for a separate swarm. CEG tracks the swarms

1   separately, and all Doe Defendants listed in any one case were members of the same, single

2   swarm.

3   26.   Users subscribe to the services of an ISP to gain access to the Internet. Each time

4   a subscriber accesses the Internet, the ISP automatically allocates a unique IP address to the

5   subscriber. An ISP generally records the times and dates that it assigns each IP address to a

6   subscriber and maintains for a period of time a record of such an assignment to a subscriber in

7   logs maintained by the ISP. In addition, the ISP maintains records which typically include the

8   name, one or more address, one or more telephone numbers, and one or more email addresses of

9   the subscriber. P2P technology relies on the ability to identify the computers to and from which

10   users can share files. The technology identifies those computers by the IP address from which

11   the computer connects to the Internet. Taking advantage of this technology and the unique data

12   associated with the torrent file having a one-to-one relationship with the file containing the

13   unlawful copy of CEG's client's motion picture, CEG's System inspects file-sharing networks for

14   computers that are distributing at least a substantial portion of a copy of a copyrighted work

15   owned by Plaintiff. That is, CEG searches for computers that are active members of the swarm,

16   uploading and downloading the accused file through use of the infringement enabling torrent file.

17   When CEG finds such a computer, CEG downloads a portion of the copy of the accused file

18   from the located computer using the infringement enabling torrent file. CEG's System also logs

19   the following publicly accessible information relating to each computer from which CEG has

20   downloaded a portion of the copy of the accused file:

        (a)   the time and date that CEG's System observed the infringer connected to

               the P2P network with respect to the infringer's computer's downloading

               and/or uploading the accused file to the Internet (hereinafter referred to as

               "Timestamp"),

        (b)   the IP address from which the infringer's computer was connected to the

               Internet at that time and date,

        (c)   the BitTorrent client used by the infringer and the port number used by the

               infringer's BitTorrent client,

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1　　　　　(d)　　　the size of the accused file on the observed infringer's computer,

2　　　　　(e)　　　the percent of the accused file downloaded by CEG from the infringer's

3　　　　　　　　　computer,

4　　　　　(f)　　　the hash of the torrent file that is associated with the accused file, and

5　　　　　(g)　　　any relevant transfer errors.

6 To the extent that any relevant transfer errors do exist, the particular instance is removed from

7 the System. To ensure the accuracy of the Timestamp, each of CEG's tracking servers has a

8 Network Time Protocol daemon (i.e., program running in the background) deployed. This

9 program maintains the System time in synchronization with time servers on the Internet. CEG

10 has used this software since the inception of the System.

11　　　　　27.　　　In addition, CEG uses available databases to record the name of the ISP having

12 control of the IP address and available geolocation databases to record the United States state

13 (and often the city) associated with that IP address. However, because of the partially

14 anonymous nature of the P2P distribution system used by Defendants, the true names, street

15 addresses, telephone numbers, and email addresses of Defendants are unknown to Plaintiff at this

16 time.

17　　　　　28.　　　As an additional check, CEG rejoins the swarm associated with the suspect torrent

18 file and again downloads the entire unauthorized copy of the motion picture. This new download

19 is viewed by a person to confirm that it is a copy of at least a substantial portion of the Plaintiff's

20 motion picture. Thus, CEG has confirmed that each of the files downloaded by it from the Doe

21 Defendants listed in **Exhibit A** attached to the Complaint filed in this case is a copy of at least a

22 substantial portion of the copyrighted work listed in **Exhibit A**. All of this information is stored

23 in database files on CEG's computers.

24　　　　　29.　　　As indicated above, an Internet Protocol address (IP address) identifies the

25 internet connection through which a computer accessed the Internet to commit the copyright

26 infringement. The IP address utilized by P2P networks, and collected by CEG, is the public

27 address, which is a globally unique address. If one knows a computer's public IP address, one

28 can, using publicly available reverse-lookup databases on the Internet, identify the ISP used by

1   that computer as well as the United States city and state in which the computer was located.

2   Based on the information from such a database, CEG believes that computers associated with all

3   the Doe Defendants listed in **Exhibit A** were used in infringements of Plaintiff's Work in the

4   state in which the court listed in the caption above is located.   However, the actual name and

5   address of the person subscribing to the ISP's service is neither publicly available, nor available

6   to CEG.

7   30.   With the Internet Protocol address and the date and time that the infringer's

8   computer was accessing the Internet through the ISP, the ISP (be it AT&T, Verizon, Qwest,

9   Comcast or any other ISP) can review its own subscriber logs to identify either (i) the names and

10 addresses of the subscriber, or (ii) the intermediary ISP through which the person is ultimately

11 subscribed to the main ISP.   In turn, if the intermediary ISP is provided with the Internet

12 Protocol address and the date and time that the infringer's computer was accessing the Internet

13 through the ISP, then the intermediary ISP can review its own subscriber logs to identify the

14 name, addresses, telephone numbers and email addresses of the subscriber.

15   31.   With respect to accused files, CEG sends notices, sometimes referred to as

16 "Digital Millennium Copyright Act notices" or "DMCA notices," to ISPs.   Each notice includes

17 the identity of an accused file and the Internet Protocol address of the computer having that file

18 available for download, along with the Timestamp associated with it.   In the notice, CEG

19 requests that the ISP forward the notice to the ISP's subscriber associated with the Internet

20 Protocol address.   Each notice includes, among other information, an address for the accused

21 infringer to contact CEG to arrange for settlement.   In the above-captioned case, the Internet

22 Protocol addresses identified in **Exhibit A** of the above-mentioned Plaintiff's Complaint are

23 those of subscribers who had not settled with CEG.   **Exhibit A** lists on a Defendant-by-

24 Defendant basis (one Defendant per row) the IP address associated with each Defendant, the

25 identity of the ISP associated with the IP address, the Timestamp that the infringement by that

26 Defendant was observed by CEG, and the software protocol used by the Defendant in infringing

27 the Plaintiff's Work.   The title of the Work, along with its copyright registration number, is set

28 forth on the first page of **Exhibit A**.   Note that CEG's System does not monitor all infringers all

16

1   the time. While the Timestamp indicates the observation of an infringing copy at a computer

2   communicating with the Internet through a particular IP address, it is likely such a computer had

3   an infringing copy of the Work on it at times before and after CEG's System observed the

4   infringement.

5   32.   With respect to Plaintiff's copyrighted motion picture named in the Complaint,

6   CEG performed the steps described in paragraphs 21-31 above. In summary, at least one

7   computer at each of the respective IP addresses listed in **Exhibit A** of the DIGITAL SIN, INC.

8   Complaint was used to make an unauthorized digital file copy of at least a substantial portion of

9   Plaintiff's Work and had such at least substantial portion of Plaintiff's Work on it, and, without

10 authorization, was used to make such file available for download by others on a P2P network.

11 As indicated above, all of the infringers identified as "Doe" defendants in the DIGITAL SIN,

12 INC. Complaint used BitTorrent software. Further, the hashes associated with the torrent files

13 on the computers having the IP addresses and Timestamps listed in **Exhibit A** are all identical to

14 each other, that is, they all have the same alphanumerical hash. This demonstrates that all the

15 Doe defendants listed in **Exhibit A** joined the same swarm.

16   33.   CEG sent DMCA notices as described above to the ISPs with respect to all the

17 Doe Defendants in the case. None of the ISPs provided the names and addresses of the Doe

18 Defendants to CEG. However, as indicated above, we could determine, from publicly available

19 databases relating to geographic locations of IP addresses, that the Doe Defendants in this case

20 are likely within the state in which this Court is located. (Because of intermediary ISPs and the

21 location of the ISPs technical facilities, these locations cannot be exactly pinpointed from

22 publicly available information.) Without information held by the ISPs, we cannot obtain further

23 information needed to identify the Defendants, including their names, actual addresses, telephone

24 numbers and email addresses.

25   34.   In summary, the Defendants in this case all copied at least a substantial portion of

26 the exact same accused file using the exact same torrent file. Furthermore, because of the nature

27 of BitTorrent software, each Defendant permitted other users to download the accused file from

28 that Defendant's computer. Thus, the Defendants were simultaneously trading (downloading

1   and/or uploading) the exact same file. While Defendants engaged in this downloading and/or

2   uploading of the file, they exposed their globally unique public IP address. With BitTorrent

3   software, one can see the IP address of the various computers that one is connected to, and which

4   are sharing files in cooperation with one's own computer.

5   35.   Continuing the summary, because the Defendants' alleged conduct occurred

6   behind the mask of their respective anonymous IP addresses, neither CEG nor Plaintiff knows

7   the identity of the Doe Defendants, namely the "seeds" and "peers" who utilized BitTorrent to

8   copy, and to allow others to copy, Plaintiff's motion picture. Accordingly, CEG utilized its

9   proprietary file-sharing forensic software to obtain the unique IP addresses that were used by the

10   respective swarm members to distribute Plaintiff's copyrighted work. The software allowed CEG

11   to identify the ISP and unique IP address for each subscriber on the date and at the time of the

12   allegedly infringing activity was observed. Plaintiff therefore identified each Doe Defendant in

13   **Exhibit A** of the DIGITAL SIN, INC. Complaint by the unique IP address assigned to the

14   Internet subscriber by the subscriber's ISP at the date and time of the observation.

15   36.   I am informed that before any discovery can be made in civil litigation, a meeting

16   of the parties or the parties' counsel must be held. However, the actual identities of the Doe

17   Defendants are unknown to Plaintiff, and therefore the DIGITAL SIN, INC. Complaint cannot

18   be served on any defendant. Without serving the DIGITAL SIN, INC. Complaint on any

19   defendant, the pre-discovery meeting cannot be held. Therefore, Plaintiff needs early discovery

20   from the ISPs, and any intermediary ISPs that may be involved, so that the names and addresses

21   of the accused infringers can be obtained by Plaintiff to enable it to enforce its rights in its

22   copyright and prevent continued infringement.

23   37.   ISPs retain their logs for only a limited time. Based on my hands-on experience

24   in working with ISPs, such information is retained for only six months or less on average. Thus,

25   such information must be requested expeditiously and the ISPs must be instructed to retain such

26   information for this litigation.

27

28

1   38.   I declare under penalty of perjury that the foregoing is true and correct of my own

2 personal knowledge, except for those matters stated as information and belief, and those matters

3 I believe to be true, and if called upon to testify I can competently do so as set forth above.

4   Executed this 3rd day of May, 2012 in Los Angeles, California.

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10   Jon Nicolini

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EXHIBIT B

DVD piracy in the U.S. becomes an industry.

Printer friendly   Cite/link   Email   Feedback
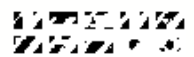
Author: Serafini, Dom
Publication: Video Age International
Geographic Code: 1USA
Date: Mar 1, 2003
Words: 1272
Previous Article: Calendar of events.
Next Article: Sumner's clever U.K. adventure.
Topics: Motion picture industry
              Crimes against
           Movie industry
              Crimes against
           Music industry
              Crimes against
              Statistics
           Piracy (Copyright)
              Statistics

Link to this page

Audiovisual piracy is a rich but dangerous business in the U.S. Last November, two armed would-be robbers broke into a small illegal CD and DVD manufacturer in Manhattan and one of them was killed. Similarly, a few months earlier, in July, also in New York, two men were wounded at the facility of a small illegal home video duplicator located near the Empire State Building.

According to the MPAA, the U.S. studios' association, over 400 labs for illegal duplication and replication of audiovisual content are discovered every year in the U.S., most of them in the New York metropolitan area. Miami, Florida, serves as the center of audiovisual piracy for Latin America.

In 2001, the legit U.S. music market was valued at $13.7 billion with the piracy marker estimated at $4.5 billion. In the same year, the theatrical market was valued at $68.2 billion. But piracy caused losses of $3 billion (excluding Internet piracy, which is not quantifiable). It is estimated that last year, DVD sales and rentals reached $10.6 billion in the U.S.

The number of illegal CDs in circulation worldwide in 2001 was estimated at 950 million, but only 20 million of these were confiscated. It is also estimated that 130 million blank DVDRs were sold worldwide in 2002.

According to the RIAA, the recording industry association, illegal sellers of CDs can deprive U.S. stores of 3540 percent of their business, in addition to diminished revenues for artists, technicians and the state, in the form of uncollected taxes. In California alone some 18,000 jobs were lost because of audiovisual piracy. Retailers in America don't seem to care for parallel imports, which mostly hurt the owners of audiovisual rights. Often DVDs and CDs cost less in the U.S. than in Europe, but the EC is not in favor of technologies that may hinder free use. Therefore, parallel imports from countries where DVDs

Finding the source of DVD piracy is elusive.

IT'S EVEN BIGGER THAN DRUGS CD, DVD PIRACY MAKES BILLIONS IN CHINA.

The good, the bad and the ugly of TV piracy.

PIRACY GETS TOP BILLING ON VISIT MAYOR TO PRESS FAKE-DVD ISSUE.

HOLIDAY BLITZ TAKES AIM AT DVD PIRATES SHOPPERS RECEIVE WARNING.

are less expensive or face fewer restrictions could be more a matter of illegal imports than of piracy.

Thanks to recent technological advances, audiovisual piracy is moving from pressed (replicated) CDs and DVDs to illegal DVD-Rs and CD-Rs via duplication (burning or recordable). Nowadays one can legally buy blank CD-Rs at 30 cents each, even in small quantities. Therefore, to distinguish their product, big recording labels don't use CD-Rs (recognizable by the bluish hue on one side), and employ expensive replication equipment.

To compensate for the losses due to piracy, U.S. recording companies recently decided to increase the average retail cost of CDs from $15 to $17 each, well aware that this could cause a surge in illegal sales (where costs amount to about $5 per disc). The retail cost of legal CDs includes the "royalty" fee. The Philips CD license agreement lowered the fee from $0.03 to $0.0 175 on each recorded CD made since July 2002, whereas the cost of polycarbonate resins increased to $3 per pound, representing 40 percent of the production cost of a blank CD-R.

To reduce piracy, some companies also produce their CDs in such a way that they cannot be used in computers or transferred onto MP3 players, and they insert a CSS encoding program in DVDs. These systems may discourage consumers, but they seldom work with professional pirates.

The least expensive way to produce illegal CDs and DVDs is through duplication with a burner worth about $9,000, but this can only be used for limited quantities. Recently, though, Marcan has introduced a new duplication system able to copy 100 CD-Ps at a time. Replicating large quantities of discs from a master is much more expensive. Such equipment can cost up to $500,000.

A way to control piracy consists in monitoring the manufacturers of duplication equipment (about 40 in the U.S.), as well as replicators of CDs and DVDs (about 50). However, used equipment is not as easy to trace, except by way of repair parts and maintenance.

Since most recordable drivers are produced by Pioneer, it's also possible to monitor piracy at the source, controlling the distribution of small equipment. In fact, there are only nine basic producers of drivers in the world, including Philips, Sony and Ricoh. Drivers labeled with other brand names such as Dell and Apple are always repackaged versions of the original brands.

Furthermore, since the number of polycarbonate producers is also small (Dow Plastic, Bayer Polyolefins, GE Plastics, among others), the production of blank CDs and DVDs could also be monitored. Optical grade polycarbonate is not that common, and replication uses a lot of it.

An element that would elude authorities' control is the packaging industry; CD and DVD cases can be purchased for as low as $0.49 each. But only large groups such as Sony and Du Pont produce the plastic material used to make those cases.

According to Barry Rosenstock, president of Anchor Digital, a DVD production company, the New York market is flooded by replicated lowend pirated DVDs from Taiwan, mainly produced by Ritek, Primedisc and Optodisc, costing one-fourth of what other illegal DVDs may cost. Conversely, much of the piracy done in the U.S. is on CD-R and DVD-R, the recordable formats. Most DVD duplicators are made by Bravo, but there are also machines which are made by various companies. However, these almost always use Pioneer drivers to do the burning.

Katherine Cochrane, president of CD-Info, said that most made-in-theU.S. piracy concerns CD-RIDVD-R, while pressed discs are imported, since it's very difficult to hide replicating equipment.

According to Tony Perez, director of the anti-piracy division of International Recording Media Association (IRMA), "Pirates seeking high volume production will not invest in expensive injection moulding equipment, but rather

Exhibit B, Page 2 of 6

misrepresent themselves to legitimate replicators and get them to manufacture product." The duplication cost of a DVD is $0.95 (for 5,000 items without cases) versus $2.50 for a VHS tape.

Nine organizations fight piracy in the U.S., including the MPAA (video), RTAA (music), IRMA (duplication and recording), BSA (software), VSDA (video and CD retailers), IDSA (Internet), in addition to the FBI and local police.

U.S. associations against audiovisual piracy:

* www.mpaa.org/anti-piracy

* www.siia.net/piracy/

* www.bsa.org/usa/antipiracy/

* www.riia.org/protect-campaign-1.cfm

* www.ifpi.org

* www.recordingmedia.org (Irma)

* www.idsa.com

* www.vsda.org

* www.sdmi.org

RELATED ARTICLE: 2002 Statistics (source: IRMA)

Replication in the world:

* CD-Audio: 4.35 billion units

* DVD-Video: 1.32 billion units

Replication in North America:

* CD-Audio: 1.63 billion units

* DVD-Video: 630 million units

CD-R demand:

* 4.225 million worldwide

* 1.3 billion in North America

Home Video

* Rental: 103 million worldwide, 70 million in North America

* Sales: 1.183 billion worldwide, 650 million in North America

DVD Sales and Rentals: $10 billion in the U.S.

(According to IRMA, 9.72 billion optical discs were replicated worldwide in 2000. IRMA lists 21 types of optical discs relevant to the piracy market, including CD-Audio, CD-Rom, CD-Video, DVD-Video, DVD-Rom and DVD-Audio).

Historical notes:

* The CD was introduced by Philips in 1979.

* The CD player was sold for the first time in Japan in 1982 by Sony (the CDP 101) and in the U.S. by Philips in 1983 (the CD 100). Philips used a

Exhibit B, Page 3 of 6

Luciano Pavarotti recording for its early presentations.

* The first commercial U.S. CD was 52nd Street by Billy Joel.

* The CD-R was introduced in 1988.

* The DVD (digital versatile disc) player was first sold commercially in 1997.

* There are two main DVD formats: DVD-5 and DVD-9.

* Today, 40 million American families own a DVD player.

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Reader Opinion

Title:

Comment:

(Submit)

Exhibit B, Page 4 of 6

Publications by Name	Publications by Date	Authors	Literature
A-D E-O P-T U-Z	before 1995 1995-1999 2000-2004 2005-2009 2010-	A B C D E F G H I J K L M N O P Q R S T U V W X Y Z	A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Exhibit B, Page 5 of 6

EXHIBIT C

Home   **Business**   **Investing**   **Technology**   **Entrepreneurs**   **Op/Ed**   **Leadership**   **Lifestyle**   **Lists**

E-MAIL   SHARE   PRINT   COMMENTS

E-Gang '09
The Year's Most Pirated Videos
Andy Greenberg, 08.05.09, 06:00 PM EDT

Despite free streaming video sites like Hulu, peer-to-peer video piracy is booming.

In Pictures: The Year's Most Pirated TV Shows
In Pictures: The Year's Most Pirated Movies

A word of advice to film and television execs frustrated by online video piracy: Stay away from superheroes.

Over the last six months, the hit graphic novel adaptation *Watchmen* and the popular NBC series *Heroes* ranked as the most often illegally downloaded movie and TV show, according to data tracked by peer-to-peer piracy research firm Big Champagne.

The simple lesson? Geeky young males--like many less piracy-capable viewers--don't necessarily like to pay for their entertainment. "I don't want to engage in too much stereotyping, but who are the people most actively helping themselves arm over arm to all this free video content?" asks Big Champagne Chief Executive Eric Garland. "They're going to be geek-leaning. Just think about how many Comic Con visitors are also heavy Bittorrent users."

In Pictures: The Year's Most Pirated Movies

In Pictures: The Year's Most Pirated TV Shows

Watchmen was downloaded nearly 17 million times from bittorrent trackers like the Pirate Bay and Mininova, according to Big Champagne. The second most pirated film, *The Curious Case of Benjamin Button*, was downloaded 13 million times. *Heroes* episodes were downloaded a total of 54.5 million times, just ahead of the **CBS** (CBS - news - people) show *Lost*, with

GO

Content Management Software   Accounting Software
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>> Browse All Directories

51 million downloads.

Profiles
Ogling YouTube
Beaming Up Holograms
Brewing Insta-Videos
Mining for Video Gems
The Web Auteur
Revving Up Video Ads
Cisco's Pipe Dreams

Features
Now Playing: Anime Online
The Quest for Video Tweets
Let A Thousand Post-its Bloom
The Year's Most Pirated Videos
The Road To Web Stardom
Online TV Shouldn't Be Free
Video Dead Ends
The Challenge Of User-Generated Porn

Video
Making Of A Forbes Story
Web Tests Reality TV
Holy 3D Hologram!
Use It, Or Lose It: Web Video
Coolest Web Video Tools

Nuts and Bolts
Online Video On A Budget
Cool Movie Tools For Your PC
Streaming Internet Movies At Home

Most Popular

1. **Five Leadership Lessons From James T. Kirk | blog**
2. **Are Google Glasses the Beginning of the End of Gadgets? | blog**
3. **12 Ways To Beat Insomnia And Sleep Better--No Matter What's Keeping You Awake | blog**
4. **10 Ways to Build a Business Culture Like Apple | blog**
5. **Will the iPad3 be the World's Greatest Remote Control -- for the Apple TV? | blog**
6. **Smart Move Is Selling Apple On iPad Announcement | blog**
7. **10 Leadership Lessons from the IBM Executive School | blog**
8. **Inside The Next iPad: What One Teardown Shop Will Look For | blog**
9. **Top Executive Recruiters Agree There Are Only Three True Job Interview Questions | blog**
10. **Facebook Can Tell You If A Person Is Worth Hiring | blog**

Pirates' preference for tights and capes is nothing new. Last year's top pirated film by a large margin was the Batman sequel *The Dark Knight*, which was downloaded well in excess of 7 million times, by Big Champagne's rough count.

More significant may be the enormous growth in peer-to-peer downloads. *The Dark Knight*'s 7 million downloads wouldn't even place the film in this year's top 10 pirated films. Even marginally successful films like *The Day the Earth Stood Still* and *Transporter 3* were pirated close to 8 million times so far this year.

That overall growth in piracy seems to show that users' gradual switch from peer-to-peer music downloads to legal streaming

music sources may not extend to video piracy. In a widely read report published in July, analyst firm Music Ally reported that illegal music downloads in Britain had fallen by a quarter between December 2007 and January of this year as young users increasingly used ad-supported free streaming services like Spotify and Last.fm.

But those streaming models may not staunch the flow of pirated TV and video downloads, Big Champagne's numbers show. Every one of the 10 ten most pirated TV shows, in fact, can also be streamed for free on sites like Hulu.com, veoh.com, or major TV network Web sites.

Today's tech-savvy TV audience, says Big Champagne's Garland, simply won't wait even a few days for a live television show to appear on a streaming Web site. That unfortunate fact made 2008 a "breakout year for television piracy," according to Garland. "There's been an evolution of expectation," he says. "If you tell a kid he has to wait a few days to see a television show on Hulu.com, he'll give you a blank stare."

The growing flood of illegal peer-to-peer downloads has recently come under fire in a high-profile lawsuit against the Pirate Bay, the world's most popular aggregator and host of bittorrent tracking files. In April, the Swedish site lost a criminal case filed by a consortium of film, music and media companies; its administrators were sentenced to a year in prison and required to pay $3 million in fines. But even if the Pirate Bay shuts down or removes its infringing files, downloaders will simply move to a host of second-tier sites waiting to absorb the Pirate Bay's audience. (See "Why Google Is The New Pirate Bay.")

In Big Champagne's list of pirated movies, Garland was most surprised by what wasn't on the list: the most recent *Star Trek* film, which was downloaded only around 5 million times in the last six months. Despite that film's mass geek appeal, Garland chalks its low piracy numbers up to the fact that pirates are skipping the low-quality video versions made with camcorders in theaters, and waiting for a higher-fidelity file stripped from an as-yet-unreleased *Star Trek* DVD. "I think that really flies in the face of everything we've thought about pirates as undiscriminating viewers," Garland says. "Even pirates will wait for quality. That strikes me as a kind of maturity in the black market."

Regardless of why *Star Trek* hasn't seen widespread piracy this summer, its producers at Paramount Pictures aren't asking too many questions. Alfred Perry, the studio's vice president for legal affairs, wouldn't speculate as to why *Star Trek* had eluded pirates. "We can say," he added, "That this is one list we are happy not to be on."

In Pictures: The Year's Most Pirated Movies

In Pictures: The Year's Most Pirated TV Shows

See Also:

Why Google is the New Pirate Bay

The Pirate Bay's Revolt

Sinking China's Video Pirates

Exhibit C, Page 3 of 4

☐ E-MAIL   SHARE ◯ COMMENTS

☐ PRINT ☐ REPRINT ✒ E-MAIL NEWSLETTERS

The Future Of Internet Advertising

Country of Equal Opportunity

Sony's Game Plan

Frist On Health Care Reform

EXHIBIT D

Technical Report: An Estimate of Infringing Use of the Internet – Summary

Dr. David Price, Head of Piracy Intelligence for Envisional, has authored a study that comprehensively estimates the amount of Internet traffic that is infringing. This summary outlines the main points arising 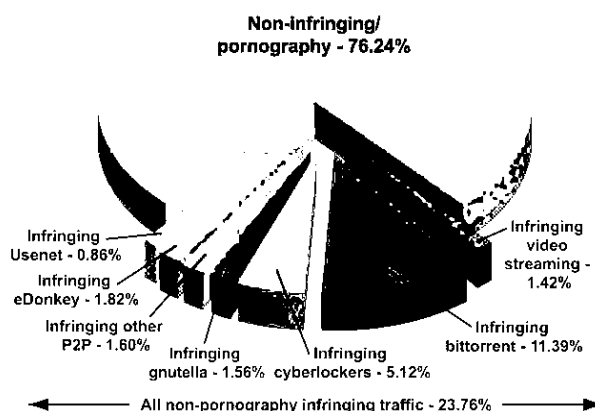from the report, the full version of which can be found at: http://documents.envisional.com/docs/Envisional-Internet_Usage-Jan2011.pdf[1]

The 56-page report, commissioned by NBCUniversal, is the first study to specifically estimate the amount of infringing traffic on the Internet.

THE BOTTOM LINE: Approximately 23.8% of global Internet traffic is infringing with bittorrent specifically accounting for almost half of that amount (representing 11.4% of global Internet traffic). Infringing cyberlocker traffic contributed 5.1% of infringing traffic and video streaming sites (such as MegaVideo and Novamov) contributed 1.4%. Other peer-to-peer networks (e.g., eDonkey and Gnutella) and file sharing arenas such as Usenet were responsible for the rest of the infringing traffic.

Traffic numbers for the US showed that over 17% of US Internet traffic is estimated to be infringing with bittorrent responsible for more than half of that amount (and equaling 9% of all Internet traffic in the US). Cyberlockers, other peer-to-peer networks and file sharing venues contributed the rest of infringing traffic.

Estimate of infringing use of global internet bandwidth

Non-infringing/ pornography - 76.24%

Infringing Usenet - 0.86%
Infringing eDonkey - 1.82%
Infringing other P2P - 1.60%
Infringing gnutella - 1.56%
Infringing cyberlockers - 5.12%
Infringing video streaming - 1.42%
Infringing bittorrent - 11.39%

All non-pornography infringing traffic - 23.76%

BITTORRENT

The report includes a detailed individual analysis of bittorrent traffic, the most popular file transfer system in use today. **The analysis focused on PublicBT tracker – the largest and most popular bittorrent tracker worldwide** – which holds information on over 2.7m individual torrents.

An analysis of the top 10,000 swarms (as measured by number of active downloaders or 'leechers') found that pornography (35.8%), film (35.2%), and television (12.7%) were the most popular content types. Excluding pornography, only one swarm in the top 10,000 offered

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[1] This summary may be found at http://documents.envisional.com/docs/Envisional-Internet_Usage_Report-Summary.pdf.

Exhibit D, Page 1 of 3

legitimate content and 99.24% of all material in the top 10,000 swarms was copyrighted. Including pornography, **63.68% of all content was copyrighted**.[2]

Envisional identified the content of all but 48 of the top 10,000 swarms and found that 85.5% were video content of some kind while software was 4.2% and computer games 6.7%.

Approximately 60% of all peers connected to the top 10,000 swarms were sharing copyrighted film content. Peers across all video categories (films, television, anime, sports, and pornography) represented slightly more than 88% of all peers in the top 10,000 torrents.

Extending the results of the top 10,000 torrents to all content represented by PublicBT indicates that, on the day of analysis, 11.5m peers were seeding or downloading copyrighted film content, 2.4m peers seeding or downloading copyrighted television content, and 3.2m pornography.

Excluding pornography, Envisional project that 99.24% of all material on bittorrent was copyright infringing.[3]

CYBERLOCKERS/FILEHOSTING SITES

Estimating the amount of copyright infringing content stored on cyberlockers is more difficult than with Bittorrent as such sites do not usually allow stored content to be searched. Instead, users must search via a third-party indexing site such as Filestube.com or a linking site such as Warez-BB.org.

To check the representative nature of content stored on cyberlockers, Envisional collected a random sample of 2,000 cyberlocker links and determined the type of content and whether it was copyrighted. As with bittorrent, **most of the analyzed content – over 90% – was copyrighted material.**

VIDEO STREAMING

In the same way that cyberlocker content is indexed by other sites, third-party portals such as MovieWatch.in or Movie2k.to offer users multiple links to the latest film or television show. For example, MovieWatch currently offers more than fifty separate working links for some popular movies.

To estimate the percentage of streaming content that infringes copyright, Envisional compared visitors to third-party index sites to visitors to bittorrent portals and multiplied that by the file size appropriate to each to yield a ratio of streaming traffic to bittorrent traffic.

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[2] A number of fake torrents were discarded and not counted in the analysis.

[3] To check its analysis, Envisional sampled five groups of 100 torrents each from various points along the long tail of PublicBT content. Excluding pornography, no non-copyrighted content was found though the amount of material that could not be identified increased slightly.

Envisional concluded that infringing traffic that comes from sites that link to pirated material is equivalent to 1.42% of all Internet traffic but noted that the figure should be taken as a "cautious estimate".

METHODOLOGY

Having determined what percentage of peer-to-peer, cyberlocker, and streaming traffic is infringing, Envisional calculated the percentage of Internet traffic generated by each using data from 2009 reports from Sandvine, Cisco, Arbor Networks, and ipoque.

For example, Sandvine estimated bittorrent is responsible for 17.9% of total Internet usage and Envisional, as previously mentioned, calculated that 63.68% of all content tracked by PublicBT was infringing. Multiplying the two (17.9% x 63.68%) indicates that infringing use of bittorrent is responsible for 11.39% of the world's Internet traffic.

THE NUMBERS

Infringing bittorrent	11.39%		Infringing bittorrent	9.11%
Infringing other P2P	4.97%		Infringing other P2P	3.77%
Infringing cyberlockers	5.12%		Infringing cyberlockers	2.19%
Infringing video streaming	1.42%		Infringing video streaming	1.52%
Infringing usenet	0.86%		Infringing usenet	0.93%
Total	**23.76%**		**Total**	**17.53%**

Piracy Intelligence

Envisional Ltd

January 2011

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Exhibit D, Page 3 of 3

EXHIBIT E

Home	Business	Investing	Technology	Entrepreneurs	Op/Ed	Leadership	Lifestyle	Lists

Digital Media

Spore's Piracy Problem

Andy Greenberg and Mary Jane Irwin, 09.12.08, 10:00 AM EDT

In a backlash against DRM restrictions, illegal downloaders aim a "virtual punch in the face" at EA.

How do you measure the failure of the copy protections that software companies place on their media products? In the case of **Electronic Arts**' highly-anticipated game "Spore," just count the pirates.

As of Thursday afternoon, "Spore" had been illegally downloaded on file-sharing networks using BitTorrent peer-to-peer transfer 171,402 times since Sept. 1, according to Big Champagne, a peer-to-peer research firm. That's hardly a record: a popular game often hits those kinds of six-figure piracy numbers, says Big Champagne Chief Executive Eric Garland.

But not usually so quickly. In just the 24-hour period between Wednesday and Thursday, illegal downloaders snagged more than 35,000 copies, and, as of Thursday evening, that rate of downloads was still accelerating. "The numbers are extraordinary," Garland says. "This is a very high level of torrent activity even for an immensely popular game title."

Electronic Arts (nasdaq: ERTS - news - people) had hoped to limit users to installing the game only three times through its use of digital rights management software, or DRM. But not only have those constraints failed, says Garland, they may have inadvertently spurred the pirates on.

On several top file-sharing sites, "Spore"'s most downloaded BitTorrent "tracker"--a file that maps which users had the game available for downloading--also included step-by-step instructions for how to disassemble the copy protections, along with a set of numerical keys for breaking the software's encryption. For many users, that made the pirated version more appealing than the legitimate one.

"By downloading this torrent, you are doing the right thing," wrote one user going by the name of "deathkitten" on the popular file-sharing site The Pirate Bay. "You are letting [Electronic Arts] know that people won't stand for their ridiculously draconian 'DRM' viruses."

"You have the power to make this the most pirated game ever, to give corporate bastards a virtual punch in the face," deathkitten added in another comment.

GO

Exhibit E, Page 1 of 4

Another user with the handle "dsmx" sounded more conflicted. "I feel bad about pirating this game I really wanted to buy it but EA put DRM on it and my policy is that any form of DRM means an instant not parting with money," he wrote. "When I pay for something I want to own it not rent it with EA deciding when I'm not allowed to play it anymore."

The copy protections on "Spore" were equally detested by a less piracy-prone crowd at Amazon.com. By Thursday evening, the game had received more than 2,100 reviews, nearly 2,000 of which had given it a rating of one star out of five. Most negative reviews--including messages titled "No way, no how, no DRM" and "DRM makes me a sad panda"--cited the game's restrictions as a sore spot.

Electronic Arts calls those criticisms unfair. "EA has not changed our basic DRM copy protection system," says corporate communications manager Mariam Sughayer. "We simply changed the copy protection method from using the physical media, which requires authentication every time you play the game by requiring a disc in the drive, to one which uses a one-time online authentication."

Electronic Arts compares its DRM solution to systems in place on services like iTunes that similarly limits the number of computers that can play a particular song. Sughayer also points out that less than 25% of EA users attempt to install the company's games on more than one computer, and less than 1% attempt to install it on more than three.

Peer-to-peer file theft is a growing problem for game developers. According to Big Champagne, games, along with television shows, are the two fastest growing types of media trafficked on peer-to-peer networks, though music remains the most often stolen medium. See "In Pictures: Why Web Pirates Can't Be Touched."

"PC games are massively pirated because you can pirate them," says Brad Wardell, chief executive of Plymouth, Mich.-based gaming company Stardock. Wardell argues that the driver for piracy is user-friendliness--not price. Instead of digital locks, Stardock requires users to use unique serial numbers which it monitors, in conjunction with IP addresses.

"Our focus is on getting people who would buy our software to buy it," Wardell says, rather than trying to strong-arm people unlikely to pay for the products into become paying customers.

DRM only limits the ability of consumers who wouldn't typically pirate media to make copies or share it with friends and family, agrees Big Champagne's Garland. But because encryption is so easily broken by savvier--and more morally flexible--users, it does little to stop the flood of intellectual property pirated over the Internet, he contends.

"DRM can encourage the best customers to behave slightly better," he says. "It will never address the masses of non-customers downloading your product."

Also See:

Ten Things You Should Know about 'Spore'

Exhibit E, Page 2 of 4

Video Piracy-Without the Piracy
Free? Steal it Anyway

Rate This Story

Your Rating   **Overall Rating**

Reader Comments

As a long time PC gamer, i can say with absolute
certainty that i will never buy DRM software. Ever. I
reformat my PC ever few months to clean it of garbage
from the net. I need to be able reinst **[Read More]**
Tags: no DRM ever

      Posted by Gamerguy | 12/31/09 02:43 PM EST   Report Abuse

The quote by Sughayer is a red herring and he knows
it. The issue is that people upgrade computers every
few years, and people's computers crash and lose data
from time to time. Each of those is anot **[Read More]**
Tags: DRM, upgrades, spore, Sughayer

      Posted by shambala | 09/15/08 11:59 AM EDT   Report Abuse

As both a techie and an avid gamer, I am fully aware of
how easy it is to obtain an illegal copy of software and
games. A lot of people I know prefer to download an
illegal game rather than even d **[Read More]**

      Posted by CaptainMoose | 09/15/08 07:15 AM EDT   Report Abuse

Read All Comments (37)

      Post a Comment

Intelligent Investing | Data | Knowledge | Insight | Wisdom

Today On Forbes.com

**An Insider's Take On Apple In The Post-Steve
Jobs Era**
Forbes Blogs
Anyone predicting the company will falter without its CEO
should take a closer look at the team he has put in place, a
former Apple senior vice president says.

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Exhibit E, Page 3 of 4

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Exhibit E, Page 4 of 4

EXHIBIT F

Kindle e-book piracy accelerates | Ebook Readers Reviews — CNET Reviews
Case 1:12-cv-10946-DJC   Document 1-2   Filed 05/26/12   Page 42 of 72
3/5/12 12:44 PM

CNET Reviews

Kindle e-book piracy accelerates

by **David Carnoy** | February 18, 2011 12:17 PM PST

Summary: What's the dark side of the success of e-readers and e-books? In a word, piracy.

The number of seeders and leechers for Kindle e-books continues to rise on The Pirate Bay.

(Credit: thescop.com (Jonathan Auxier))

Several months ago I set up a Google alert for my book, "Knife Music," to keep abreast of anything anybody was saying--good or bad--about the thing. Over the months I've received news of the occasional blog post and tweets, but more recently I popped open an alert to learn that my book was being pirated--both as a separate file and part of two larger Torrents called 2,500 Retail Quality Ebooks (iPod, **iPad [http://www.cnet.com/apple-ipad/]** , Nook, Sony Reader) and 2,500 Retail Quality Ebooks for Kindle (MOBI).

I had the strange reaction of being both dismayed and weirdly honored that someone had selected my book to strip free of its copy-protection (DRM) and include as part of a collection of "quality" e-books, many of which were from very good authors.

OK, so the use of the term "quality" was a reference to the formatting of the e-books and not the quality of the actual work, but for a moment I wasn't too bothered. After all, if someone downloads 2500 books, what are the odds he or she is going to even bother looking at yours? I was probably only losing a few bucks, especially considering my e-book is currently priced at $3.99, which only leaves me with about 50 cents a book after the publisher, e-book seller, and agent, take their cuts. Even if I missed out on selling 200 e-books, that's a mere $100. No big deal, right?

Well, obviously, for big authors, this whole pirating thing presents a bigger problem-- and a bigger loss. But that isn't what dismayed me so much (sorry, but when you're a little guy, you don't care so much about how much the big guys are losing). Rather, what's shocking, and what the publishers should be most concerned about, is the fact that a library of 2,500 books can be downloaded in a matter of hours. E-books are small files and 2,500 of them can be packed into a single download (Torrent) that's only about 3.4GB. If you set the average price per book at a measly $2, the worth of said download would be $5,000. Bring it up to $4 a book and you're at $10,000. (In fact, publishers charges much more for some of these books).

By comparison, a single DVD movie is usually larger than that, as well as many retail PC games, which tend to run in the 4GB to 7.5GB range. A "major" PSP title is about 1GB, sometimes a bit larger (yes, the PSP has been severely impacted by piracy).

I probably don't need to point this out but I will. I have about 600 books in my paper book collection, which took me years to gather and prune during various moves. Digitally, that same collection could be downloaded in around 30 minutes and stored on a cheap 1GB thumb drive, which could then be copied in a matter of seconds and passed on to someone else.

A lot of people think moving away from paper is a good thing. Maybe it is. But what should also be alarming to publishers is that the number of people pirating books is growing along with the number of titles that are available for download. As I've written in the past, **the rise of the iPad [http://www.cnet.com/8301-18438_7-20005008-82.html]** has spurred some of the pirating, but now the huge success of the Kindle is also leading to increased pirating. Yes some companies, such as Attributor, have done **some studies about the issue [http://news.cnet.com/8301-17938_105-20018831-1.html]** , and seen increases. But for my evidence one only need glance at Pirate Bay and see what people are downloading and how many of them are doing it.

The most popular e-book download on Pirate Bay is the Kindle Books Collection, which has something like 650 e-books in it (it's just less than 1GB), and is ahead of a 224-page PDF e-book called "Advanced Sex: Explicit Positions for Explosive Lovemaking." At the time of this writing, 668 people were "seeding" the Kindle collection while 153 people

Exhibit F, Page 2 of 4

were downloading it. A few month ago, the numbers of people downloading e-book collections like this at given moment were in the 50 to 60 range with fewer seeders.

Now some of you in the comments section are going to inevitably say, who needs 2,500 books? And most people don't read all that much anyway. But the point here is that there may very well be a dark side to the success of e-books, which some are speculating will make up **50 percent of the market [http://www.mediabistro.com/ebooknewser/gina-centrello-ebooks-will-be-50-of-book-sales-in-five-years_b1267]** in as little as 5 years.

You can argue whether it was Napster or the rise of the **iPod [http://www.cnet.com/ipod/]** --or most probably both--that led to the huge amount of music piracy, but the book business will also take its share of big losses as it moves further into the digital realm. True, it's much harder to get someone to invest the time to read a book than to listen to an album, watch a movie, or play a game, so chances are piracy won't hurt the book business as much as those industries. But on the flip side, as I said before, it's also much quicker to download a huge collection of books or a number of New York Times bestsellers with a single click of a button.

How much will price play into all this? Well, you already have plenty of folks out there who think it's outrageous for publishers to price an e-book at $12.99 or $14.99 when the hardcover is first released. And some of those folks may feel justified in downloading pirated versions of books in protest--or just because they say they don't like getting ripped off. And while some pricing decisions by publishers are clearly bad, pricing may be a smaller part of the piracy equation than you might think. What a surprising number of people have told me is that they pirate stuff for the same reason that a lot of people like the Kindle: it's all about instant gratification.

As one friend put it, "You want something, you click a button, you get it." He has a Netflix account and knows he can get a particular movie within 36 hours delivered to his door, yet he he says sometimes uses Bit Torrent to get the movie so he can watch it faster.

This is something publishers will have to contend with going forward. They know it, and Scott Turow, the President of the Author's Guild and a practicing lawyer, is acutely aware of **how much of a problem it is [http://www.cnet.com/8301-18438_7-20005008-82.html]** and could become.

"It [piracy] has killed large parts of the music industry," he said in an interview. "Musicians make up for the copies of their songs that get pirated by performing live. I don't think there will be as many people showing up to hear me read as to hear Beyonce sing. We need to make sure piracy is dealt with effectively."

Alas, so far it hasn't been dealt with effectively and I doubt it ever will be. It won't cost

me much now--and it may even help me find a few readers who might not have read my book--but in the long run, it could really hurt. And unlike the New York Time's David Pogue, I've got no live act. Perhaps I need to get one, though I think I'd have a hard time matching his rendition of "**Apps, I did it again [http://www.youtube.com/watch?v=BJX2eJ6qoa0&feature=related]** ."

Comments?

[http://www.cnet.com/profile/dcarnoy/]
[http://www.cnet.com/profile/dcarnoy/]

About David Carnoy [http://www.cnet.com/profile/dcarnoy/]

Hunkered down in New York City, Executive Editor David Carnoy covers the gamut of gadgets and writes his **Fully Equipped column [http://www.cnet.com/fully-equipped/]**, which carries the tag line "The electronics you lust for." He's also the author of "**Knife Music [http://www.amazon.com/Knife-Music-Novel-David-Carnoy/dp/1590203259/ref=sr_1_2? ie=UTF8&s=books&qid=1265662931&sr=8-2]** ," a novel that's available at **Amazon [http://www.amazon.com/Knife-Music-Novel-David-Carnoy/dp/1590203259/ref=sr_1_2? ie=UTF8&s=books&qid=1265662931&sr=8-2]** , **bn.com [http://search.barnesandnoble.com/Knife-Music/David-Carnoy/e/9781590203255/?itm=3&USRI=knife+music]** , and as a **Kindle [http://www.amazon.com/Knife-Music-A-Novel-ebook/dp/B0045JL6LE/ref=tmm_kin_title_0? ie=UTF8&m=AG56TWVU5XWC2&qid=1285803953&sr=8-1]** , **iBooks [http://itunes.apple.com/us/book/knife-music/id394950806?mt=11]** , or **Nook [http://search.barnesandnoble.com/Knife-Music/David-Carnoy/e/9781590205822/?itm=1&USRI=knife+music]** e-book.

[http://plus.google.com/112016425853417877466/]

EXHIBIT G

- Daily
- Weekly
- Monthly
- Quarterly
- Yearly

2008-07-01 2012-03-05 22:02:26 ___

Select Period:

July 2008 ⬍

— Mar 2012 ⬍

Shortcuts: <u>All Data (default)</u> | <u>Last 12 Months</u> | <u>Last 6 Months</u> | <u>Last 3 Months</u> | <u>This Month (4 days)</u>

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- Main
- <u>Press</u>
- <u>FAQ</u>
- <u>About</u>
- <u>Feedback</u>

Exhibit G, Page 1 of 8

StatCounter Global Stats
Top 5 Browsers in the United States from March 2011 to Feb 2012
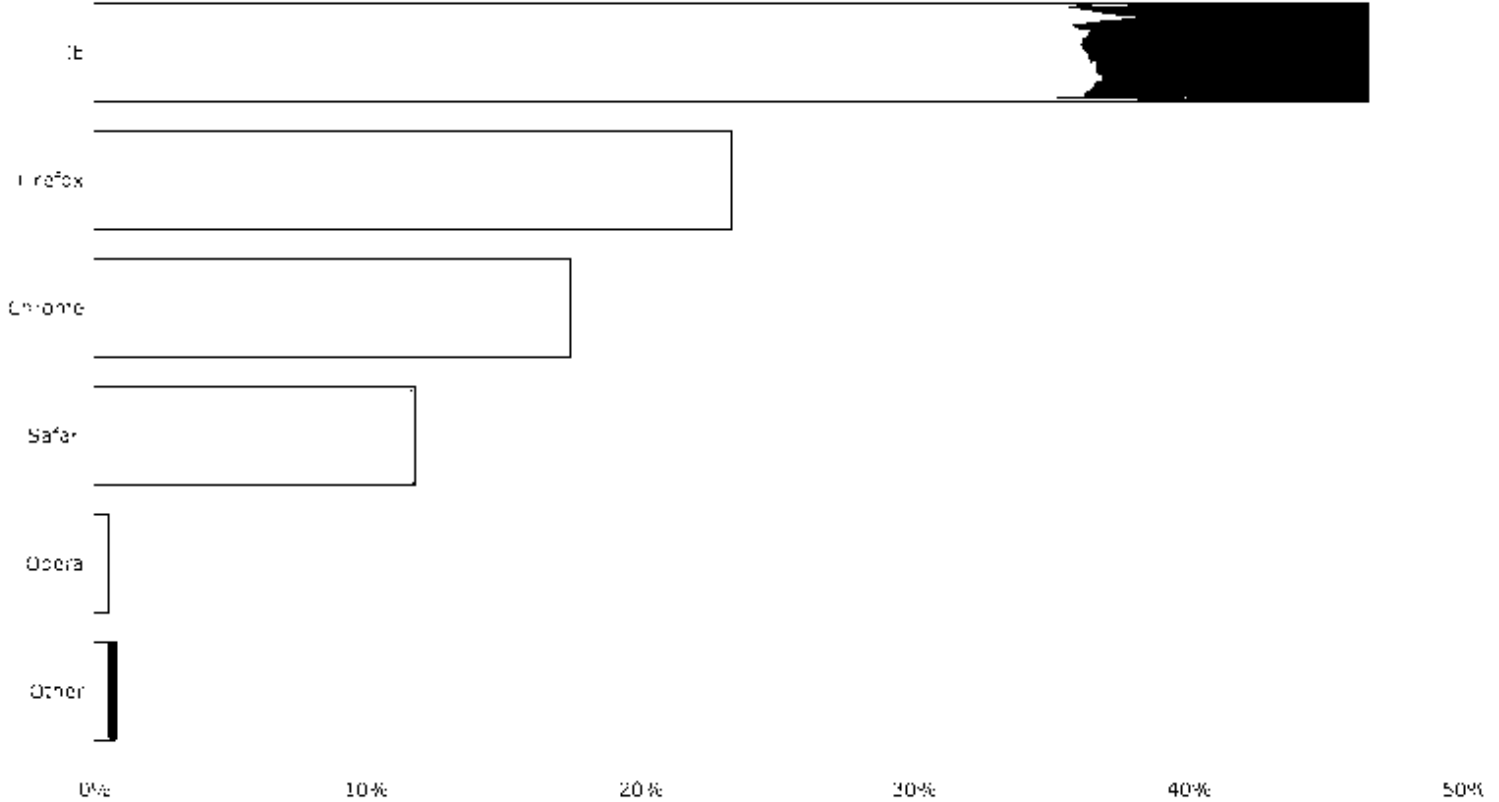
Loading...

○ ⌒ Line ⊙ ⊨ Bar

Statistic: Browser ▼

Browser
Browser Version
Mobile Browser
Operating System
Mobile OS
Search Engine
Mobile Search
Mobile vs. Desktop
Screen Resolution
Social Media
Digg vs Reddit
Mobile Vendor (Beta)

Country/Region: United States of Ameri ▼

Worldwide
Africa
Antarctica
Asia
Europe
North America

Oceania
South America
Afghanistan
Aland Islands
Albania
Algeria
American Samoa
Andorra
Angola
Anguilla
Antigua and Barbuda
Argentina
Armenia
Aruba
Australia
Austria
Azerbaijan
Bahamas
Bahrain
Bangladesh
Barbados
Belarus
Belgium
Belize
Benin
Bermuda
Bhutan
Bolivia
Bosnia and Herzegovina
Botswana
Bouvet Island (Bouvetoya)
Brazil
British Virgin Islands
Brunei Darussalam
Bulgaria
Burkina Faso
Burundi
Cambodia
Cameroon
Canada
Cape Verde
Cayman Islands
Central African Republic
Chad
Chile
China
Christmas Island
Colombia
Comoros
Congo, Democratic Republic of the
Congo, Republic of the

Cook Islands
Costa Rica
Cote d'Ivoire
Croatia
Cuba
Cyprus
Czech Republic
Denmark
Djibouti
Dominica
Dominican Republic
Ecuador
Egypt
El Salvador
Equatorial Guinea
Eritrea
Estonia
Ethiopia
Faroe Islands
Falkland Islands (Malvinas)
Fiji
Finland
France
French Guiana
French Polynesia
Gabon
Gambia
Georgia
Germany
Ghana
Gibraltar
Greece
Greenland
Grenada
Guadeloupe
Guam
Guatemala
Guernsey
Guinea
Guinea-Bissau
Guyana
Haiti
Holy See (Vatican City State)
Honduras
Hong Kong
Hungary
Iceland
India
Indonesia
Iran
Iraq

Ireland
Isle of Man
Israel
Italy
Jamaica
Japan
Jersey
Jordan
Kazakhstan
Kenya
Kiribati
North Korea
South Korea
Kuwait
Kyrgyzstan
Lao
Latvia
Lebanon
Lesotho
Liberia
Libyan Arab Jamahiriya
Liechtenstein
Lithuania
Luxembourg
Macao
Macedonia
Madagascar
Malawi
Malaysia
Maldives
Mali
Malta
Marshall Islands
Martinique
Mauritania
Mauritius
Mayotte
Mexico
Micronesia
Moldova
Monaco
Mongolia
Montenegro
Montserrat
Morocco
Mozambique
Myanmar
Namibia
Nauru
Nepal
Netherlands Antilles

Netherlands
New Caledonia
New Zealand
Nicaragua
Niger
Nigeria
Niue
Norfolk Island
Northern Mariana Islands
Norway
Oman
Pakistan
Palau
Palestinian Territory
Panama
Papua New Guinea
Paraguay
Peru
Philippines
Pitcairn Islands
Poland
Portugal
Puerto Rico
Qatar
Reunion
Romania
Russian Federation
Rwanda
Saint Barthelemy
Saint Helena
Saint Kitts and Nevis
Saint Lucia
Saint Martin
Saint Pierre and Miquelon
Saint Vincent and the Grenadines
Samoa
San Marino
Sao Tome and Principe
Saudi Arabia
Senegal
Serbia
Seychelles
Sierra Leone
Singapore
Slovakia (Slovak Republic)
Slovenia
Solomon Islands
Somalia
South Africa
South Georgia and the South Sandwich Islands
Spain

Exhibit G, Page 6 of 8

Sri Lanka
Sudan
Suriname
Svalbard & Jan Mayen Islands
Swaziland
Sweden
Switzerland
Syrian Arab Republic
Taiwan
Tajikistan
Tanzania
Thailand
Timor-Leste
Togo
Tokelau
Tonga
Trinidad and Tobago
Tunisia
Turkey
Turkmenistan
Turks and Caicos Islands
Tuvalu
Uganda
Ukraine
United Arab Emirates
United Kingdom
United States of America
Uruguay
Uzbekistan
Vanuatu
Venezuela
Viet Nam
Wallis and Futuna
Western Sahara
Yemen
Zambia
Zimbabwe
Time Period: March 2011 to Feb 2012

Save Graph Image

.jpg format

Download Data

.csv spreadsheet format

Embed: <div id="browser-US-

Exhibit G, Page 7 of 8

html source snippet

Customize

- Select a statistic (e.g. search engine)
- Choose a region/country
- Pick a time period & view your graph

Recent Global Stats News Items

1. **Mon, 06 Feb 2012**
   Mobile internet usage is doubling year on year
2. **Thu, 15 Dec 2011**
   Chrome 15 Becomes World's Most Popular Browser
3. **Thu, 01 Dec 2011**
   Chrome Overtakes Firefox Globally for First Time

Learn

- Identify search engine usage trends
- Get market share stats for mobile browsers
- Find the most popular operating systems

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EXHIBIT H

STAT OWL

Select a Report

Market Share
Market Share Trends
Version
Version Trends
Render Engine

Plugin Overview
Flash
Shockwave
Google Gears
Quicktime
Windows Media Player
Silverlight
Java

Market Share
Market Share Trends
Version
Version Trends

Market Share
Market Share Trends
Search Engine Results Page
Keyword Count
Domain in Keywords

JavaScript Versions
SVG Support
PNG Alpha Support
ACID Compliance

Screen Resolution
Architecture
Color Depth
Third-Party Cookie Support

ISP Market Share
Connection Speed
Residential vs Corporate
Landing Page Type
Behind Proxy Server
Visitor Source

Search Methods
Search Suggestions

.Net
MS Office
Media Center
Tablet PCs
ActiveX Disabled

Rich Internet Applications
Microsoft Market Dominance

How We Collect Data

Web Browser Market Share
Web Browser usage analysis and market penetration statistics

This report displays information on web browser market share and usage. Also known as "browser wars", the statistics below analyze the amount of market penetration attained by browsers such as Internet Explorer, FireFox, Safari and Google Chrome. We only list browsers that have amassed at least 0.1% of the market share during the selected time period.

You can view this report utilizing trend charting by visiting the Web Browser Market Share Trend page.

Report Filters
Click here to drill-down to find the information you are looking for!

| Mar '11 - Feb '12 | Monthly | 3D Pie | All Browsers | All Operating Systems | All Search Engines | All Connections |

LAST MONTH

LAST 3 MONTHS

LAST 6 MONTHS

Web Browser Market Share

YEAR-TO-DATE

SELECT DATE RANGE

Internet Explorer, 54.12%

Gecko, 0.13%
Opera, 0.4%
Other, 0.67%
Safari, 10.35%

Firefox, 20.03%

Chrome, 14.08%

Exhibit H, Page 1 of 3

Report Drill-Downs

You may click any of the Browser results below to drill down to a more detailed report for that individual Browser.
You can also check "Explore" to view multiple Browsers at a time.

☐	Internet Explorer	60.27%	59.14%	57.51%	56.23%	55.26%	53.81%	53.79%	52.59%	51.17%	51.42%	51.
☐	Firefox	19.73%	20.15%	20.46%	20.85%	20.30%	20.61%	20.18%	20.08%	20.15%	19.73%	18.
☐	Chrome	9.61%	10.30%	11.08%	12.04%	12.61%	13.64%	13.79%	15.02%	16.13%	16.78%	16.
☐	Safari	9.62%	9.68%	9.88%	9.77%	10.68%	10.75%	10.81%	11.13%	11.29%	10.69%	10.
---	Other ↩	0.31%	0.26%	0.55%	0.59%	0.64%	0.64%	0.86%	0.66%	0.71%	0.83%	1.(
☐	Opera	0.42%	0.43%	0.49%	0.46%	0.37%	0.39%	0.37%	0.36%	0.38%	0.39%	0.:
☐	Gecko	0.03%	0.06%	0.03%	0.06%	0.13%	0.15%	0.21%	0.17%	0.16%	0.16%	0.

◄ ►

Wikipedia Definition:

The term "browser wars" refers to the competition for dominance in the web browser marketplace. The term is used to denote two specific periods of time: the competition between market-dominating Netscape Navigator and its eventual defeat by Microsoft Internet Explorer during the late 1990s, and the competition from 2003 onwards between the dominating Internet Explorer and several other emerging browsers including Mozilla Firefox, Safari, Opera and, since mid-2008, Google Chrome.

Recent Chrome, Firefox, Internet Explorer, Opera, Safari, Browser Market Share News - 12 total (view more)

Chrome Shines Bright In Controversial Security Fight	Feds give vote of confidence to Google Chrome, Android	Google's Chrome drops share for second straight month	Mozilla Launches Firefox Flicks Competition
Dark Reading / 3/2/12	Ars Technica / 3/2/12	InfoWorld / 3/2/12	WebProNews / 3/2/12
The major browsers have all made solid strides in security in the past few years, but Chrome's sandbox makes Google's browser a harder target for attackers to exploit with malicious code, four researchers said here in a presentation yesterday.	By Dan Goodin	Published March 2, 2012 6:25 PM Google software has won at least two important endorsements from the federal government in the past few months with the US State Department adopting the Chrome browser and the National Security Agency ...	By Gregg Keizer	Computerworld The browser battle returned to a kind of normalcy last month as Microsoft's IE (Internet Explorer), which had posted its largest-ever share increase in January, declined slightly in February. And Google's Chrome fell for ...	By Chad Sweely · 12 hours ago · Leave a Comment Today (Friday, March 2nd, 2012), Mozilla (the company behind the well-known browser Firefox), announced on their blog that they would be kicking off a new contest called Firefox Flicks.

View all Chrome, Firefox, Internet Explorer, Opera, Safari, Browser Market Share News »

Click here to add a comment about this report.

this is a great tool/site however, where do i find how you made those calculations? estimations? (geo, # of users...)

any view in which i can see by country/continent..?

🦉 REPORT ABUSE

thanks!!

heimer 12/13/09 5:58AM

SEE WHAT I SAW

Re: Alexey

This site focusses on compiling aggregate Internet trends worldwide although it does appear to be currently skewed on US-based traffic IMHO. Hopefully they add the ability to filter based on geographic region eventually - the site appears pretty new so they may not have gotten to that just yet.

I personally really like the worldwide view and think this site does a better job than any other sites I have seen offering this information. I can use the aggregate Internet usage data and compare that to the usage on my sites to draw useful comparisons and gain additional insights.

toowired 4/9/09 10:19AM

SEE WHAT I SAW

Yes, these graphs are shiny, but it is clear that this kind of statistic is pointless because of overgeneralization.

Actually, market share for browser depends at least on two variables: geographical preferences (user habits within certain countries or areas) and website audience (which, in turn, depends on website type).

For example, I live and work in Russia and support several health related websites - the browser shares for the audience are: MSIE (all variants) - 50%, Opera (9.x) - 25% (!!!), Firefox (all variants) - 22%.

Another example - take any webdev related site - Firefox and Safari values will be much higher.

That's why - Know YOUR audience!!

Alexey 3/21/09 1:28PM

SEE WHAT I SAW

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EXHIBIT I

BitTorrent Plus Safer, faster torrenting.

Beginner's Guide

Help   Videos & Guides   Beginner's Guide

FAQ

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BitTorrent Connection Guide

BitTorrent WebUI

Creating A Torrent

How To Make The PC - TV Connection

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User Manual

What is BitTorrent?

BitTorrent is the global standard for delivering high-quality files over the Internet. With an installed base of over 160 million clients worldwide, BitTorrent technology has turned conventional distribution economics on its head. The more popular a large video, audio or software file, the faster and cheaper it can be transferred with BitTorrent. The result is a better digital entertainment experience for everyone.

BitTorrent is a protocol (a set of rules and description of how to do things) allowing you to download files quickly by allowing people downloading the file to upload (distribute) parts of it at the same time. BitTorrent is often used for distribution of very large files, very popular files and files available for free, as it is a lot cheaper, faster and more efficient to distribute files using BitTorrent than a regular download.

BitTorrent Mainline is a client. A 'client' in this case is a computer program that follows the rules of a protocol. For example, HTTP (HyperText Transfer Protocol) is the protocol used to download web pages and other content - like this page - and your HTTP client (or browser) is the program you use to get those web pages. Some popular browsers include Microsoft Internet Explorer, Mozilla Firefox, Safari, and Opera. To an extent, they all work the same way because they follow the same set of rules. The BitTorrent Mainline client will give you access to the world of content on the protocol in a lightweight, fast and reliable package.

How do I download files using BitTorrent?

Just like you need a URL like 'www.google.com' to go to a web site and download content, you need a 'torrent file', a small file that tells the BitTorrent client the necessary info to download the content you want. This is generally obtained from a torrent website. Many websites offer torrents as one method of downloading files. For example, OpenOffice.org, a free alternative to Microsoft Office, can be downloaded using BitTorrent. Other sites, like legaltorrents.com, offer torrents of all kinds of things - these sites are just repositories of torrents and usually don't actually create any of the content available. They're known as **indexes** or **trackers** - there is a subtle difference between the two. (The Wikipedia article on BitTorrent trackers explains the difference.)

Once you've obtained the torrent file from wherever, you simply need to import it into BitTorrent. There are several ways of doing this.

- Click **File** then **Add Torrent** in BitTorrent (or press CTRL+O) and locate the torrent file.

- Double-click the torrent file. *(Only works if you've associated .torrent files with BitTorrent - BitTorrent asks you if it should do this the first time you run it. If you clicked 'No', you can do this by going to **Options**, then **Preferences** in BitTorrent, then clicking **Associate with .torrent files** under **Windows Integration**.)*

- *(advanced)* Click **File** then **Add Torrent from URL** in BitTorrent (or press CTRL+U), and enter a URL from which the .torrent file can be obtained.

But before you start downloading, make sure you've followed the BitTorrent Connection Guide. It doesn't take long and will help ensure that your torrent experience is faster and more consistent.

BitTorrent finished downloading, but now it says it's Seeding. What does that mean?

Seeding is where you leave your BitTorrent client open after you've finished your download to help distribute it (you distribute the file *while* downloading, but it's even more helpful if you continue to distribute the full file even after you have finished downloading). Chances are that most of the data you got was from seeds, so help give back to the community! It doesn't require much - BitTorrent will continue seeding until the torrent is removed (right click the torrent, then hit **Remove**). Proper practice is to seed until the ratio of upload:download is at least 1.00.

Can I really download *anything*?

BitTorrent is purely a content distribution method, just like a web browser, and similarly, does not incorporate any technology to monitor or restrict your activity. There is also nothing in BitTorrent that prevents anyone from seeing your IP address. Take care to follow your country's laws concerning copyrighted content.

How do I know that someone isn't sending out viruses on BitTorrent?

In short, you don't. You should treat something downloaded with BitTorrent just like any file downloaded from the internet - that is, if you don't trust the source of the file, then you should use caution when opening it. If the torrent site you obtained it from offers comments, be sure to read those first. But regardless of the comments, running a virus scan on the downloaded files is usually a good idea. BitTorrent guarantees that the content you download is not altered from when the torrent was originally created, but if the source files used to create the torrent were already infected, this will provide no protection!

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Where can I find out more?

This guide and the User Manual is a good place to start. There is also a lot of BitTorrent reference information available on the internet, and searching for "bittorrent" on Google is a good start. The following sites are particularly useful:

- Brian's BitTorrent FAQ and Guide - a great resource to all things BitTorrent, with far more info than this page, though some of it is a bit technical.

- BitTorrent FAQ - Provides a list of common questions and answers and solutions to a number of common problems.

- BitTorrent User Manual - The main documentation for BitTorrent. Explains everything related to the client. Press F1 while viewing the BitTorrent window, or go to Help -> BitTorrent Help.

- The BitTorrent specification - Technical information on the way BitTorrent works.

- BitTorrent.org - a forum for developers to exchange ideas about the direction of the BitTorrent protocol.

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EXHIBIT J

Free Download

BitTorrent Plus   Safer, faster torrenting.

Frequently Asked Questions

Help   FAQs   Concepts

Concepts

What do all these different terms mean (seeder, tracker, peer, etc.)?

availability
The number of existing full copies of the file available to the client for downloading. The higher this
number is, the potentially easier and quicker it can be to download the complete file (not
accounting for other factors). If this number is less than one (for example, 0.65) then there is not a
full copy of the file available to download.

block
A block is a piece of a file. When a file is distributed via BitTorrent, it is broken into smaller pieces,
or blocks. Typically the block is 250kb in size, but it can vary with the size of the file being
distributed. Breaking the file into pieces allows it to be distributed as efficiently as possible. Users
get their files faster using less bandwidth.

client
the BitTorrent software used to download and upload files. The BitTorrent client can be
downloaded here.

leech or leecher
usually refers to a peer that is downloading while uploading very little, or nothing at all. Sometimes
this is unintentional and due to firewall issues. The term leech is also sometimes used to simply
refer to a peer that is not seeding yet.

peer
one of a group of clients downloading the same file.

re-seed
Re-seeding is the act of putting up a new complete copy of a file after no more seeds are available
to download from. This is done to allow clients with only partial downloads to complete the
download process and increases availability.

scrape

FAQs

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scrape
This is when a client sends a request to the tracker for information about the statistics of the torrent, like who to share the file with and how well those other users are sharing.

seed
a complete copy of the file being made available for download.

seeder/seeding
a peer that is done downloading a file and is now just making it available to others.

swarm
a group of seeds and peers sharing the same torrent.

torrent
generally, the instance of a file or group of files being distributed via BitTorrent.

torrent file
a file which describes what file or files are being distributed, where to find parts, and other info needed for the distribution of the file.

tracker
a server that keeps track of the peers and seeds in a swarm. A tracker does not have a copy of the file itself, but it helps manage the file transfer process.

When I finish downloading a file, BitTorrent appears to continue uploading. What is it uploading?

When BitTorrent finishes downloading a file, the bar becomes solid green and the newly downloaded file becomes a new "seed"--a complete version of the file. In this example, the top file is complete and can now seed.

It will continue to seed the file to other interested users until you tell it not to by pausing it or removing the torrent from your queue. The more clients that seed the file, the easier it is for everyone to download it. So, if you can, please continue to seed the file for others by keeping it in your queue for a while at least.

Where can I find stuff to download using the BitTorrent Client?

You can always check out www.bittorrent.com for a wide variety of digital fun. Other search engines, communities, and sites posting torrent files exist as well. You can even search for torrents by putting in what you're looking for, then adding "torrent" in any Internet search engine.

Is BitTorrent really free?

Yes, the BitTorrent software client, as well as creating, downloading, and sharing torrents with peers are completely free. There's no subscription, memberships, fees--nothing like that.

If someone DID charge you a fee to get our software client or access our site, you have been scammed and should seek a refund. Our software and web site can be freely accessed at http://www.bittorrent.com/.

What is BitTorrent?

BitTorrent is a way to transfer files of just about any size quickly and efficiently. It works by breaking files up into small pieces. The file is downloaded piece by piece from one or many different sources. It's efficient because you get faster downloads using a lot less bandwidth. The name BitTorrent is also used to describe the official BitTorrent client.

When you use BitTorrent, you make, distribute and get files. To make and share a file or group of files through BitTorrent, you first make it into a "torrent"--a small file which contains information about the files and about the computer that coordinates the file distribution. Others (refered to as "peers") find and open your torrent and begin downloading the pieces. As the file downloads to peers' machines, those peers also share the pieces they get with even more people who are also trying to download the same file. This sharing makes the file easier to download as more parts become available from multiple sources. Since the file is broken up into small pieces, little bandwidth is used to do the overall transfer. Once the file is finished downloading, the client software continues to share the completed file (becoming a "seed") with others looking for it. This also means the file can still be downloaded long after the original poster has stopped seeding the file.

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EXHIBIT K

BitTorrent

What is **BitTorrent?**

BitTorrent is a free speech tool.

BitTorrent gives you the same freedom to publish previously enjoyed by only a select few with special equipment and lots of money. ('Freedom of the press is limited to those who own one' -- journalist A.J. Liebling.)

You have something terrific to publish -- a large music or video file, software, a game or anything else that many people would like to have. But the more popular your file becomes, the more you are punished by soaring bandwidth costs. If your file becomes phenomenally successful and a flash crowd of hundreds or thousands try to get it at once, your server simply crashes and no one gets it.

There is a solution to this vicious cycle. BitTorrent, the result of over five years of intensive development, is a simple and free software product that addresses all of these problems.
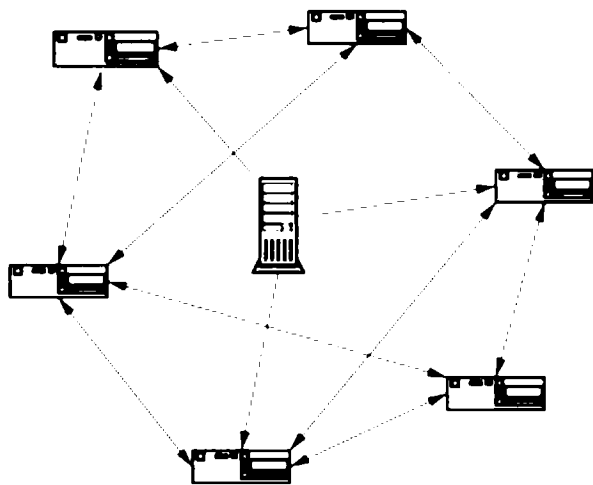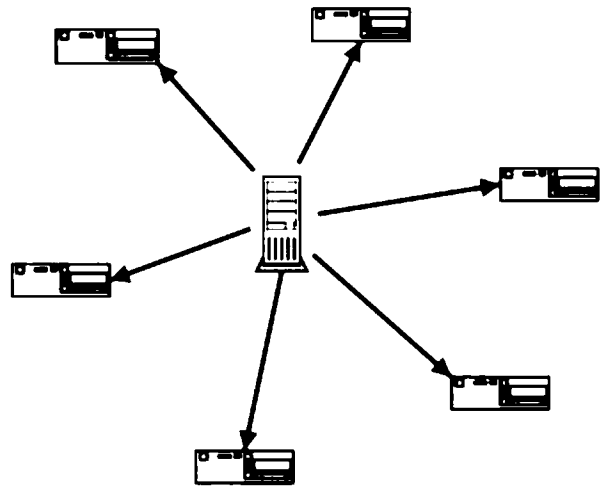
The key to scaleable and robust distribution is cooperation. With BitTorrent, those who get your file tap into their upload capacity to give the file to others at the same time. Those that provide the most to others get the best treatment in return. ('Give and ye shall receive!')

Cooperative distribution can grow almost without limit, because each new participant brings not only demand, but also supply. Instead of a vicious cycle, popularity creates a virtuous circle. And because each new participant brings new resources to the distribution, you get limitless scalability for a nearly fixed cost.

BitTorrent is not just a concept, but has an easy-to-use implementation capable of swarming downloads across unreliable networks. BitTorrent has been embraced by numerous publishers to distribute to millions of users.

With BitTorrent free speech no longer has a high price.

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THE MEDIA EQUATION

The Glut of Shows Unwatched

By DAVID CARR
Published: September 5, 2010

The great thing about modern technology is that you never have to miss anything on television. That's also the terrible thing about it.

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Apple Faces Many Rivals for Streaming to TVs (September 6, 2010)

Drilling Down: Life Without a TV Set? Not Impossible (September 6, 2010)

Last Sunday, I was traveling and did not see "Mad Men." As someone who cares about being in the know, when I got back on Monday, I wanted to catch up on the episode. Because I spend time on Twitter, I already knew that the episode included a creative session conducted in the nude, so I wanted to see it for myself before I came across other spoilers.

Having set my DVR — I subscribe to the FiOS television service from Verizon — for just such a circumstance, my wife and I plopped down on Monday night for a little time with Don and Peggy. I hit play, and then the screen went blank. After several more attempts, I called in the household's chief technology officer.

"You recorded the high-def channel," said my 13-year-old daughter Maddie, adding that seeing as I own a cheap set from Costco, it wasn't going to play.

Check, but not checkmate. Verizon has an on-demand service, but as it turns out "Mad Men" doesn't show up for a few days. Starting to feel desperate, I thought for a moment about hopping on the laptop and searching BitTorrent for an illegal copy, but given that I make a living creating original content for a large media company, stealing from another one did not seem like a good idea.

Then I remembered iTunes. Right there for $2.99, Season 4, Episode 6, "Waldorf Stories." As I took the iPad downstairs to put it closer to the wireless signal, I told my wife it was going to take about 30 minutes to download. When I got back upstairs, she was already asleep and I shrugged and settled in for a little me time with the Mad Men. I woke up in the middle of the night with the iPad perilously balanced on my less-than-flat midsection, wondering what I had missed.

That was Monday. By Wednesday, Steve Jobs, the sensei of all consumer desires, had announced the resurrection of Apple TV. For $99, I could buy a new geegaw from Apple that would allow me to rent, not buy, television shows for 99 cents that would play on

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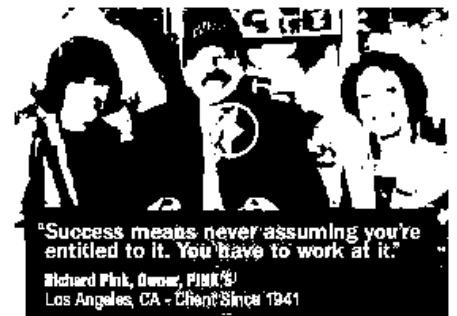
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devices that won't fit on my stomach, like big flat-screen televisions. (Then again, for the time being only Fox and ABC are doing television business with Apple, so it would not have ended my search for "Mad Men.")

Apple is hardly alone. Amazon, Netflix and Google are getting in the television game. And all of them want to make sure that I have the means to dial up the programming I want at a time of my choosing on a device of my selection. Everyone wants to make sure that I never miss a thing.

But maybe I should. Television, which was once the brain-dead part of the day, had become one more thing that required time, attention and taste. I have fond memories of the days when there were only three networks and I could let my mind go slack as I half-watched Diane and Sam circle each other on "Cheers," because that was pretty much the only thing on.

Did watching those shows raise my cultural I.Q. or put me in the thick of social media discussions over whether Snooki was actually the author of her own place in the cultural narrative? Um, no. But neither did it turn me into a cool hunter, worried about missing something, or a technologist, juggling devices and platforms the minute I got home.

In the dawning era of an always-on database of television, even shows I missed on purpose now find me. It was always a source of iconoclastic pride that I never saw a single episode of "Seinfeld" or "Friends" back when they were in their prime, but in the era of multiplying channels and ubiquitous choices, those shows have now hunted me down.

The media world today is less the paradox of choice than the inundation by options. Right now, waiting patiently next to my television, I have "The Girl With the Dragon Tattoo," "Sin Nombre" and "Sunshine Cleaning." The latter two movies have been sitting there for months, and I can't remember the last time I used the DVD player for something not related to work.

My DVR is groaning at 79 percent of capacity, including that episode of "Deadliest Catch" from two months ago in which the captain dies. I ordered up episodes of "The Good Wife" for my iPad after hearing about it from friends and seeing that it got lots of Emmy nominations, but when I settled in on a long airplane ride to catch up, some guilty time with "Hot Tub Time Machine" got in the way.

That both recent and ancient television is, or will soon be, a few clicks away just adds to a buffet of media of all types I can't possibly finish. My iTunes library would not fit on my new iPad because I have about 75 gigabytes of music, 20,000 songs or so, many of which I have yet to hear.

Our ability to produce media has outstripped our ability to consume it. The average photograph now gets looked at less than once simply because there is almost zero cost and effort to producing one.

And gone now is the guilty pleasure of simply staring at something mildly entertaining. We don't watch TV anymore as much as it seems to watch us, recommending, recording and dishing up all manner of worthy product. Yes, it's the New Golden Age of Television, but I miss the old idiot box. It made me feel less stupid.

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